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Nov. 22, 1966

A. WEST  
 DEVICE FOR EXERCISING AND COORDINATING FACIAL AND RELATED  
 MUSCULATURE AND STRUCTURE  
 Filed May 17, 1965

3,286,576

FIG. 1.

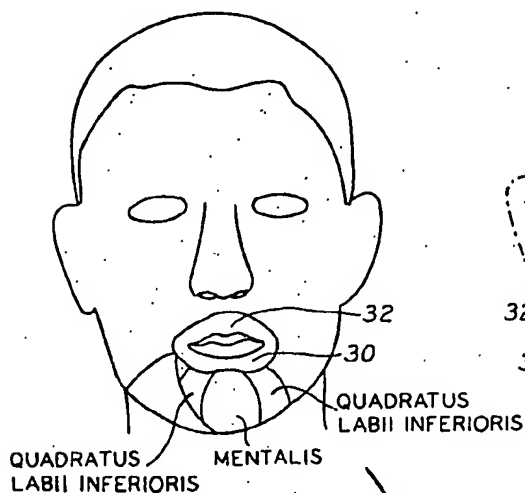


FIG. 2.

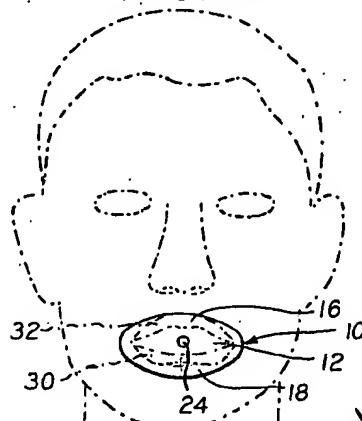


FIG. 3.

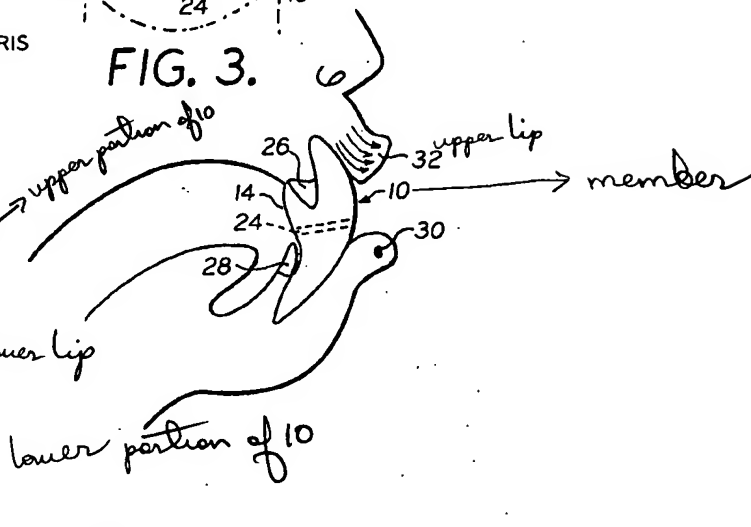


FIG. 4.

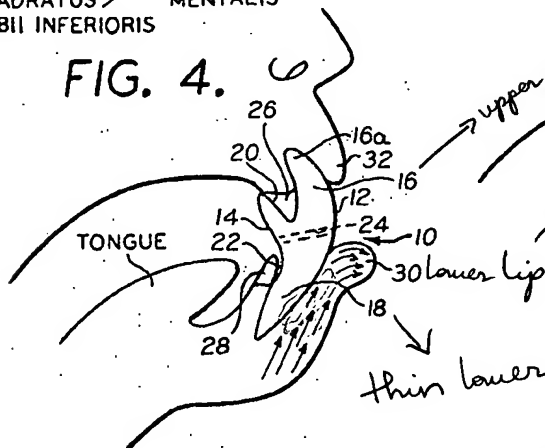


FIG. 6.

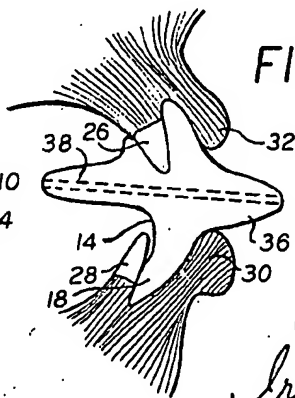
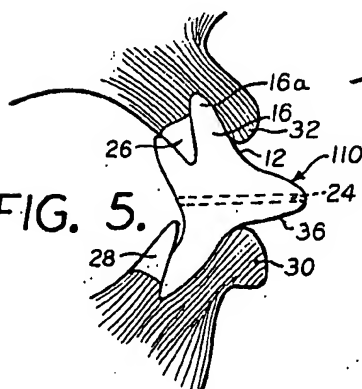


FIG. 5.



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3,286,576

## DEVICE FOR EXERCISING AND COORDINATING FACIAL AND RELATED MUSCULATURE AND STRUCTURE

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Filed May 17, 1965, Ser. No. 456,394  
11 Claims. (Cl. 84-466)

This invention relates generally to a device for exercising the lip muscles and more particularly to a device for coordinating related muscles of the embouchure in conjunction with the playing of all wind instruments or for use in speech therapy, singing or for forming the dental freeway space.

The mouthpiece of wind instruments such as a reed, a cup, etc., is usually supported by the lips and related musculature and structure of the person playing the particular instrument. Normally, a musician obtains sufficient strength and coordination in his lip muscles to support his instrument only after long periods of practice and playing. However, it has been found that in the majority of cases such periods of playing have produced bruising of the lips and in many instances has actually caused scar tissue to form about the lip. More specifically, when a tyro begins playing any wind instrument the lips are normally compressed between the mouthpiece of the instrument and the teeth. This action eventually causes bruising of the lips. When the student again attempts to play the instrument after, for example, a half-hour has elapsed, the swollen muscle fibers in the lips act as a cushion for the instrument and the player mistakenly believes this to be the development of the associated muscles. However, the constant pressure exerted against the swollen lips may eventually cause scar tissue to form. Such scar tissue will not be as supple as the lips per se and the playing of the instrument may seriously be hampered.

Accordingly, an object of the present invention is to provide a device for toning up, invigorating and coordinating related muscles of the embouchure.

It has been found that the use of the vestibule (the space between the lips and the teeth which terminates at the buccinators) as a resonance chamber produces the optimum results with respect to the richness of quality of the sound produced by the instrumentalist. However, the vestibule is rarely used or even understood by the student of wind instruments.

Another object of the present invention is to provide a device which, when inserted into the mouth identifies the two areas: the vestibule and the mouth proper.

Still another object of the present invention is to provide a device wherein the muscles associated with the lips are naturally formed and exercised in their functional positions as they would be when playing wind instruments.

A further object of the present invention is to provide a device which will exercise, coordinate and develop the musculature and structure associated with the lips to maintain the vestibule area when a person is playing any wind instrument.

In the fields of playing wind instruments, singing or in the field of speech therapy, it is imperative that the student exercise proper breathing habits. Accordingly, a still further object of the present invention is to provide a device which demonstrates how variations in the air stream may be achieved through the use of related internal structures (tongue, cheeks, teeth, muscles, etc.).

Another feature of the present invention is to provide a device which is received within the mouth and which provides the tongue with an added tactile point of reference so that the tongue can be manipulated into different variations and positions in accordance with instructions from a teacher.

2

In the field of dentistry it sometimes becomes vital for a person to form the so-called freeway space. With the oral cavity in this position the antagonistic muscles are in a state of balanced tension. That is, there is a balance between the muscles that raise the jaw and the muscles that lower the jaw.

Accordingly, another object of the present invention is to provide a device which fits within the mouth and which causes the related structure to form the freeway space.

Additional objects and advantages of the present invention will become more apparent from a consideration of the following detailed description when taken in conjunction with the accompanying drawings, in which:

FIG. 1 illustrates some of the muscles which are adapted to be exercised and coordinated by the device of the present invention;

FIG. 2 is a front view of a first embodiment of a mouth exerciser constructed according to the present invention;

FIGS. 3 and 4 respectively illustrate the application of the device of the present invention for exercising and coordinating the upper and lower lip and related muscles;

FIG. 5 illustrates a second embodiment of a mouth exerciser constructed according to the present invention; and

FIG. 6 illustrates a third embodiment of a mouth exerciser constructed according to the present invention.

While the present invention as described below relates primarily to a device for exercising the lip muscles in conjunction with the playing of wind instruments, it is to be noted that this description is by way of illustration only and is not to be interpreted as limiting the uses of the present invention. That is, the device of the present invention may also be utilized in various fields such as speech therapy and teaching singing, as will become apparent from the following discussion.

A first embodiment of the device of the present invention is illustrated in FIGS. 2, 3 and 4 and comprises a member, designated generally by the numeral 10, which is adapted to fit within the mouth. The member 10 includes a generally convex front surface 12 and a generally concave rear surface 14. The upper portion 16 of the member 10 is relatively thick and tapers downwardly to a relatively thin lower portion 18. The rear surface 14 terminates below the front surface 12 and defines a wall 16a which projects above the top edge of the rear surface. Provided in the top portion 16 is a groove 20 which extends downwardly from the top edge of the rear surface 14. An approximately centrally located recess 22 is provided in the rear surface 14 of the member. The member 10 is also provided with a through bore 24 which extends downwardly rearwardly from the front surface of the member.

When it is to be used the device is placed in the mouth with the upper front teeth 26 in the groove 20 and the lower portion 18 between the lower front teeth 28 and the lower lip 30. (It is to be noted that portions of the device of the present invention extend beyond the teeth, between the gums and the lips. Thus, it is to be understood that when it is stated that the device is received between the teeth and the lips, that portions of the member 10 are also received between the associated gums and the lips.) The wall 16a is received between the upper lip 32 and the teeth 26. The device may be sized so that the lower edge of the member 10 will abut the bottom wall of the chamber defined by the lower lip 30 and the gums supporting the lower teeth 28 to maintain the upper teeth 26 spaced from the lower teeth 28, with the lower teeth 28 spaced rearwardly of the upper teeth 26. In this manner, it is impossible for the

member 10 to be clenched between the teeth. Alternatively, the device may be sized so that the lower edge of the device 10 will terminate above the bottom wall of the chamber defined by the lower lip 30 and the gums supporting the lower teeth 28. However, the lower teeth 28 will still be spaced rearwardly of the upper teeth thereby forming the freeway space. Additionally, the recess 22 is positioned adjacent the upper edge of the lower teeth 28 so that a clearance will exist between the member 10 and the lower teeth.

In the preferred embodiment, the groove 20 may be filled with a thermosetting plastic material so that the device may be custom molded to the mouth of the specific user. More specifically, the plastic filling the groove 20 is the type which softens when placed in hot water. Thus, the user places the member 10 in hot water and then places the member in his mouth and bites down so that the upper teeth create the exact mold in the softened groove. The user then removes the device and drops it into cold water thus hardening the plastic lining and providing a mold which exactly fits the bite of the user.

When the device is utilized to exercise the lips, the user or student attempts to bite the device. Since the member 10 cannot be clenched between the teeth, the lower lip 30 will ride upwardly and outwardly on the front surface 12 of the member 10 (FIG. 4). (Alternatively, the lip 30 may be pushed upwardly and outwardly.) For this action, the following muscles will be exercised: the mentalis and the right and left quadratus labii inferioris (FIG. 1). The upper lip 32 will evert as shown in FIGS. 3 and 4. The eversion of the lips is maintained under tension until the muscles blanch, at which time they are relaxed. This exercise is repeated until the muscles are strengthened and coordinated to the extent whereby the lips and the associated musculature may support any wind instrument.

Accordingly, a device has been provided for strengthening the lip muscles without the attendant bruising or crushing of the lips as heretofore encountered by a student learning to play any wind instrument.

It is to be emphasized that the greatest benefit to be obtained from the aforementioned exercise can occur only when there is a balance between the pull of the muscles that raise and close the jaw. That is, when the freeway space is formed in the mouth. While this particular balance is obtained with the present invention, it is to be noted that such a balance could not be obtained if the member 10 were actually clenched or clamped between the teeth.

Additionally, it is to be noted that the member 10 occupies the vestibule space (the space between the lips and the teeth which terminates at the buccinators). Thus, the student is actually made to feel this cavity and, through proper muscle exercising, can be made to maintain this space when playing any wind instrument to provide an extra resonance cavity which enhances the quality of the sound reproduction when the student plays an instrument.

The device of the present invention is preferably fabricated from a plastic material. Accordingly, the lower portion 18 of the device may be trimmed to bring the upper and lower teeth (incisors) together to approximate the size of the musical instrument mouthpiece whether the mouthpiece is actually received in the mouth or on the lips. Thus, the device can be individually adapted to exercise the lips for any particular musical wind instrument mouthpiece.

As noted above, the device of the present invention is also adapted to teach the user proper breathing techniques when playing an instrument, singing or, in the field of speech therapy, when forming words. Accordingly, when the member 10 is inserted into the mouth and the user exhales, the air will pass through the bore 24. Thus by manipulating and coordinating the various portions of the mouth (tongue, cheeks, palate, teeth, etc.)

different cavities can be formed with the tongue which will result in different air speeds and temperatures of the exiting air. Similarly, when inhaling, the speed of the air through the bore 24 and the temperature of the air will vary according to the internal structure of the mouth. The experienced teacher can immediately correct any defects in any one particular structure by noting the variations in the air stream. Additionally, the flow of air may be regulated through the bore 24 by inserting one of a series of tubes having different internal diameters which are sized to fit within the bore 24, to illustrate to the student how variations in the flow of the air affect the structure of the elements comprising the mouth. This will be particularly helpful in teaching a person to sing.

A second embodiment of the present invention is illustrated in FIG. 5 and is similar to the member 10 illustrated in FIGS. 3 and 4 with the exception that an integral forwardly extending projection 36 is provided on the front surface 12 of the member 10 which maintains the lips 30 and 32 in spaced relation to each other. The bore 24 extends through this projection. Thus, when the lips are exercised in the above mentioned manner, the lips, the right and left quadratus labii inferioris and the mentalis will be naturally formed and exercised and coordinated in their functional position as they would be if the mouthpiece of a wind instrument were actually inserted into or positioned against the mouth of the user.

A third embodiment of the present invention is illustrated in FIG. 6 and is similar to that shown in FIG. 5 with the exception that an integral rearwardly extending projection 38 is provided on the rear wall 14 of the member and is so positioned so that when the member 10 is positioned within the mouth, the projection 30 will be spaced above the top edge of the teeth 28, to prevent any clenching of the member between the teeth. The rear projection is particularly important in speech therapy and although one specific rear projection is shown it is to be understood that the projection 38 may be of any desired contour or shape. The rear projection is included to assist the palate and the tongue in tactile probings and the identification of existing space area in the mouth proper. The projection 38 also helps create additional sub-spaces in the mouth with the tongue. That is, the projection 38 forms a target for the tongue. The tongue is taught to assume a new position and is provided with contact points in the process of learning to find its particular target through a series of approximate probings. With the device in the position shown in FIG. 6, the tongue can assume a particular position once it naturally feels the proper position. Additionally, the device illustrated in FIG. 6 is similarly provided with a through bore 36 which is inclined rearwardly upwardly through the rearwardly extending projection 38.

Accordingly, a device has been provided for exercising and coordinating the lips and associated muscles in conjunction with the playing and supporting of any wind instrument mouthpiece, which is simple in construction and which produces a strengthening of the lip muscles without the attendant bruising or the producing of scar tissue. Additionally, the device may also be extremely useful in the field of speech therapy or as an aid in singing instruction.

While preferred embodiments have been described it will become apparent that numerous omissions, changes and additions may be made in such embodiments without departing from the scope or spirit of the present invention.

What is claimed is:

1. A device for exercising and coordinating selected facial and related muscles comprising a member adapted to be received within the mouth, said member including an upper portion provided with a groove for receiving the upper teeth therein, and a lower portion sized to fit between the lower lip and the lower gums in spaced rela-

5

tion to the upper edge of the lower teeth when the mouth is closed for positioning the lower front teeth rearwardly of the upper front teeth, said member being sized so that the bottom edge abuts the bottom wall of the chamber defined by the lower lip and the lower teeth to space the upper and lower teeth apart.

2. A device for exercising selected facial muscles as in claim 1, and spacing means connected to said member for maintaining the lips in spaced relation to each other.

3. A device for exercising selected facial muscles as in claim 2, wherein said spacing means comprises an integral forwardly extending projection on said member adapted to project between the lips when said member is received within the mouth.

4. A device for exercising selected facial muscles as in claim 3, and a through bore in said projection, said through bore providing a passage for the flow of air.

5. A device for exercising and coordinating facial and related muscles comprising a member having a front and a rear surface adapted to fit the mouth, said member including an upper portion provided with an upper teeth receiving groove, a lower portion adapted to fit between the lower lip and the lower teeth and abutting the bottom wall of the chamber formed therebetween, said lower portion being sized to position the lower front teeth rearwardly of the upper front teeth to prevent clenching of the member between the teeth, and a recess on the rear surface of the member positioned adjacent the upper portion of the lower teeth when the member is in the mouth and the mouth is closed, said recess being sized to provide a clearance between said member and the top surface of the lower teeth.

6. A device for exercising and coordinating facial and related muscles as in claim 5, and a forwardly extending projection on said member adapted to be received between the lips.

7. A device for exercising and coordinating facial and related muscles as in claim 6, and an integral rearward-

6

ly extending projection on said member positioned to be spaced substantially above the lower teeth when the member is in the mouth and the mouth is closed.

8. A device as in claim 7, and a through bore in said member and said rearwardly and forwardly extending projections providing a passage for the flow of air.

9. A device as in claim 7, wherein the front surface of the member is convex and the rear surface of the member is concave.

10. A device according to claim 5, in which said recess extends over a substantial portion of the rear surface of said lower portion to provide a space between the lower teeth and said member to prevent the clenching of said member between the teeth when the mouth is closed.

11. A device as in claim 1, and a rearwardly extending projection on said member sized and positioned to be in spaced relation to the upper edge of the lower teeth when said member is received in the mouth and the mouth is closed.

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RICHARD B. WILKINSON, *Primary Examiner*.

LOUIS J. CAPOZI, *Examiner*.

C. M. OVERBEY, *Assistant Examiner*.

# United States Patent [19]

Martin et al.

[11] 4,338,928

[45] Jul. 13, 1982

## [54] LIP SHIELD AND TREATMENT DEVICE

[76] Inventors: Leonard G. Martin, 301 Golden Isle Dr., Apt. 105, Hallandale, Fla. 33009; Herbert S. Leb, 671 NE. 195 St., Apt. 121, North Miami Beach, Fla. 33179

[21] Appl. No.: 185,103

[22] Filed: Sep. 5, 1980

[51] Int. Cl.<sup>3</sup> ..... A61F 5/56

[52] U.S. Cl. .... 128/136

[58] Field of Search ..... 128/136, 132 R, 260; 2/174, 2, 9

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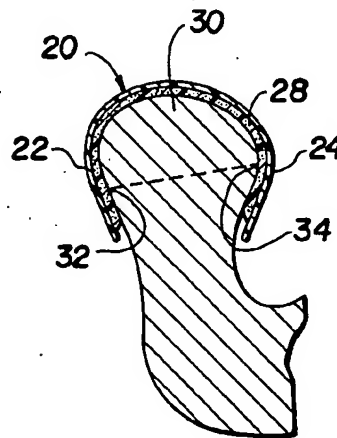
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Primary Examiner—John D. Yasko  
Attorney, Agent, or Firm—Herman J. Hohausner

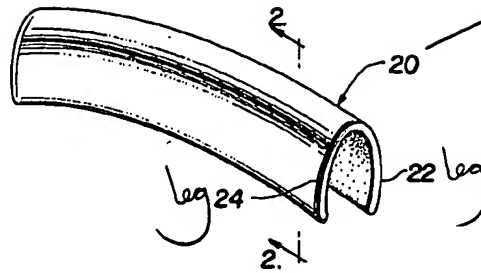
## [57] ABSTRACT

A lip shade and treatment device comprising a one-piece member having the general configuration of the outer surface of a lip and a cross-section in the shape of a "U" to be worn on either the upper or lower lip of the user and having a lining on the interior surface upon which medication can be applied.

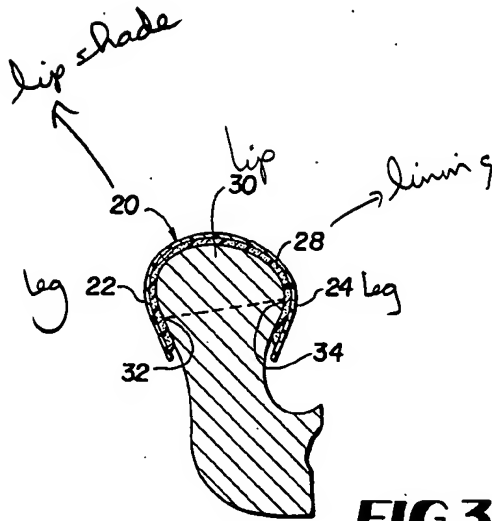
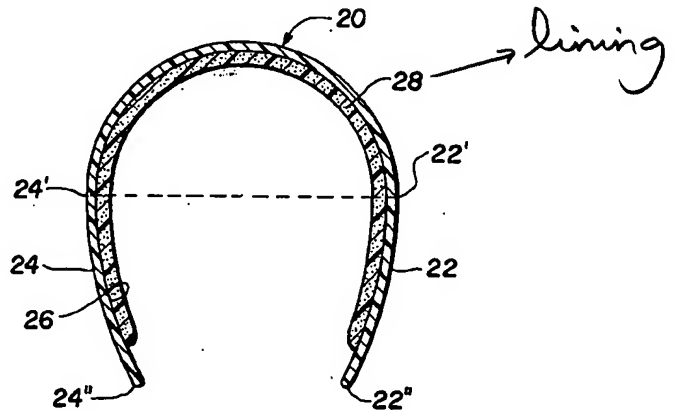
10 Claims, 5 Drawing Figures



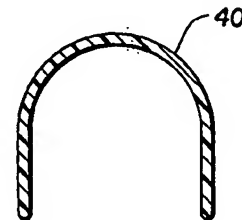
**FIG. 1**



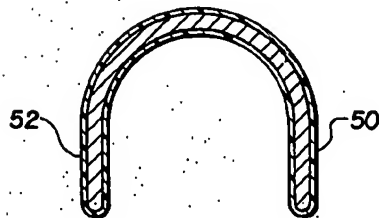
**FIG. 2**



**FIG. 3**



**FIG. 4**



**FIG. 5**



## LIP SHIELD AND TREATMENT DEVICE

### BACKGROUND OF THE INVENTION

The present invention relates generally to the field of preventive medicine and therapeutic devices and more particularly to a new device to aid in the prevention and/or therapy of pathologies of the lips.

It is well known that the two fleshy folds that surround the mouth in humans referred to as "lips" are extremely sensitive parts of the human body. The lips are constantly subjected to potentially harmful exposure from elements of the environment including radiation as from the sun, extreme weather conditions, wind, air pollutants and the like and are further susceptible to enumerable pathologies including lip keratoses, chapping, dryness, fissuring, ulcerations, exudations, crusting, exfoliations, inflammation, infections, and edema.

No external portion of the human body is as active as the lips in terms of being closely associated with everyday human activities including oral communication, respiration and eating abilities. The location and structure of the lips result in those human activities being severely hampered, if any of the above abnormalities exist. As a consequence, when the lip must be treated as by the application of medication and/or protective covering or bandaging to the outer surface thereof using present methods it becomes very inconvenient to the patient, if not impractical per se. Further, there is a problem of maintaining the medication and/or protective covering on the effected area. Subconscious tongue probing, effects of saliva, and interaction with the opposing lip are examples of conditions that result in the wearing away of lip medication, preventing the uninterrupted natural healing process and causing constant irritation to the lip.

Heretofore there was no device that one could use to protect and prevent abnormalities from occurring to the lip and in addition be used by itself or in conjunction with medication for therapeutic purposes.

### SUMMARY OF THE INVENTION

Accordingly, it is an object of this invention to provide a device that protects the lips from exposure. It is another object of this invention to provide a lip mounted device that can aid in the treatment of existing lip pathologies.

It is a further object of this invention to provide a lip mounted device that can be retained on the lip without adversely affecting normal breathing, speech, jaw movement and the like.

It is yet another object of this invention to provide a lip shade device, simplistic in its design and inexpensive in its construction.

According to the invention, there is provided a lip shade and treatment device that is easily retained on the lip. In the preferred embodiment of the invention, the lip shade and treatment device is an integral piece shaped to conform to the configuration of a normal lip. The U-shaped cross-section defines a first leg adapted to fit over the portion of the lip exterior of the mouth including the vermillion border and a second leg adapted to fit over the intra-oral surface of the lip when worn by the user. If desired, before mounting the device upon the lip, appropriate medication can be applied either directly on the lip or on the interior surface of the lip shade and treatment device so that when used with medication opposing lip contact, external irritation,

undesired sequellae, lip biting, tongue investigation and other healing preventing action is avoided. In an alternative embodiment a lining of sponge-like material may be used on the interior surface of the device to more efficiently hold the medication. In still a further embodiment the device may be constructed of materials that are known to screen out or block various unwanted rays from the sun or other radiation emitting sources. In yet another embodiment the device can be made to have a hollow interior so that desired material can be inserted for blocking radiation or for other purposes.

In the preferred embodiment the "U"-shape cross-section is horseshoe shaped so that the legs of the "U" are closer together at the ends than at their middle so that the device is resiliently but securely maintained on the lip.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the inventive lip shade and treatment device.

FIG. 2 is a cross-section taken along the lines of 2—2 in FIG. 1.

FIG. 3 is a diagrammatic side view of the inventive device mounted on the lower lip of a user.

FIG. 4 is a cross-section of an alternative embodiment of the lip shade and treatment device.

FIG. 5 is a cross-section of another alternative embodiment of the lip shade and treatment device.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings in detail, wherein like reference numerals indicate like parts throughout the several figures, reference numeral 20 represents the inventive lip shade and treatment device made of any suitable resilient material having the general outer configuration of a normal lip, and being flexible enough to fit various shaped lips.

Device 20 may be worn on either the upper or lower lip, but because the lower lip is known to be subjected to more frequent problems, all the below description will be directed to use of device 20 on the lower lip of the user.

When mounted upon the lip 30, as seen in cross-section in FIG. 4, the exterior leg 22 of device 20 covers the exterior vermillion surface of lip 30 and extends below the vermillion border 32 while leg 24 covers the intra-oral portion of lip 30 extending below the vermillion-mucosal border 34 which usually represents the highest point of dental contact of the inner lip. It is known that the maximum width of the cross-section of the lip can be generally represented by a line drawn from the vermillion border to the vermillion-mucosal border. In FIG. 4 the maximum width is represented by the dotted line connecting points 32 and 34. In the preferred embodiment of the lip shade and treatment device the shape of a cross-section of device 20 is seen in FIG. 2 to be a generally "U"-shaped horseshoe configuration in which the lower leg portions represented by points 24" and 22" converge to define a gradual decrease in the distance between the legs. The length of the legs of the "U" are sufficient so that the maximum width of device 20 will fit comfortably over the maximum width of lip 30 and the lower ends 22" and 24" of device 20 will comfortably serve to secure the device 20 on the lip 30. It can be appreciated that the shape of legs 22 and 24 may take various forms and as seen from the

3

FIG. 4 cross-section of an alternative embodiment of the lip shade and treatment device represented by numeral 40, the legs of the "U" may be constructed so the lower ends thereof are substantially parallel. A further embodiment may include lower leg portions that diverge after, converging so as to form a rounded support for the device.

Referring again to FIGS. 1-3, a lining 28 is shown to be located on the internal surface 26 of device 20 and is provided so that appropriate medication can be applied thereon when so desired. It can be appreciated in alternative embodiments that the lining 28 may be excluded from the device 20. Lining 20 may be made of any suitable material, but it has been found that a soft sponge-like material adhesively mounted is preferred. Lining 28 serves an additional function of providing a soft surface upon which the surface of the lip 30 may rest thus avoiding possible irritations should the lip 30 be tender from the existing pathologies located thereon or other reasons.

FIG. 5 is directed to an alternative embodiment wherein the lip shade and treatment device 50 has a hollow portion 52 within which any desired material may be introduced to screen or block various rays of the sun or other radiation emitting sources. It is understood that in any of the above described embodiments, materials having any desired physical characteristics including flexibility, weight, color, density, radiation absorption and the like may be used.

From the preceding description of the preferred embodiments, it is evident that the objects of the invention are obtained and a novel lip shield and treatment device is provided. Although the invention has been described in detail, it is clearly understood that the same is by way of illustration and example only and is not to be taken by way of limitation. The spirit and scope of this invention is to be limited by the terms of the appended claims.

We claim:

1. An improved lip shield adapted for comfortable and effective mounting on a single human lip, said human lip characterized as having an exterior vermilion surface ending at the vermilion border, an intra-oral surface ending at the vermilion-mucosal border, and a generally U-shaped horseshoe configured cross-section with said cross-section having a maximum width along an imaginary line connecting the point on said cross-section representing said vermilion border to the point on said cross-section representing said vermilion-mucosal border,

said improved lip shield comprising a one-piece member having a first leg means for covering said exterior vermilion surface of said lip, a second leg means for covering said intra-oral surface of said lip, and further having a generally U-shaped horseshoe configured cross-section corresponding to said lip cross-section with the maximum distance between said first and second leg means being measured along an imaginary line connecting the point on said shield cross-section that covers said lip vermilion border to the point on said shield cross-

4

section that covers said lip vermilion-mucosal border when said shield is mounted on said lip, said shield cross-section having first, second, and third portions, said first portion located on one side of said imaginary line representing the maximum distance between said first and second leg means and said second and third portions located on the other side of said imaginary maximum distance line and wherein the distance between any two points on respective first and second leg means located on said first portion of said shield cross-section is less than said maximum distance, and wherein the distance between any point on said first leg means located on said second portion and any point on said second leg means located on said third portion is less than said maximum distance.

2. The improved lip shield according to claim 1 wherein said first leg means extends over said lip vermilion border and said second leg means extends over said lip vermilion-mucosal border when mounted on said human lip.

3. The improved lip shield according to claims 1 or 2 wherein said first and second leg means are substantially parallel in said second and third portions of said shield cross-section and are connected in said first portion of said shield cross-section.

4. The improved lip shield according to claims 1 or 2 having a hollow chamber for holding material used to block various forms of radiation, said hollow chamber being completely surrounded by the walls of said lip shield.

5. The improved lip shield according to claims 1 or 2 having means located on the surface of said lip shield adapted to be in contact with said lip for maintaining medication to treat said lip thereon.

6. The improved lip shield according to claim 4 having means located on the surface of said lip shield adapted to be in contact with said lip for maintaining medication to treat said lip.

7. A lip shield device adapted for comfortable and effective mounting on a human lip comprising a member having the general outer configuration of the shape of a normal lip and a generally U-shaped configured cross-section wherein said device has a hollow chamber for holding material used to block various forms of radiation said hollow chamber being completely surrounded by the walls of said lip shield.

8. A lip shield device according to claim 7 having a first leg means for extending over the vermilion border of said lip and second leg means for extending over the vermilion-mucosal border of said lip when said shield device is mounted on said lip.

9. A lip shield device according to claim 8 wherein said first and second leg means are substantially parallel.

10. A lip shield device according to claims 7, 8 or 9 having means located on the surface thereof adapted to be in contact with said lip for maintaining medication to treat said lip.

\* \* \* \* \*



US005152300A

**United States Patent** [19]

Horst

[11] **Patent Number:** **5,152,300**[45] **Date of Patent:** **Oct. 6, 1992**[54] **GUARD FOR PROTECTING THE CORNER  
OF A PATIENT'S MOUTH**[76] **Inventor:** Patricia J. Horst, 2625 Harlem Blvd.,  
Rockford, Ill. 61103[21] **Appl. No.:** 783,539[22] **Filed:** Oct. 28, 1991[51] **Int. Cl.:** ..... A61C 5/14[52] **U.S. Cl.:** ..... 128/857; 433/93;  
128/859[58] **Field of Search** ..... 128/846, 857, 859, 861,  
128/862; 433/93, 94, 91, 136, 137, 140[56] **References Cited****U.S. PATENT DOCUMENTS**

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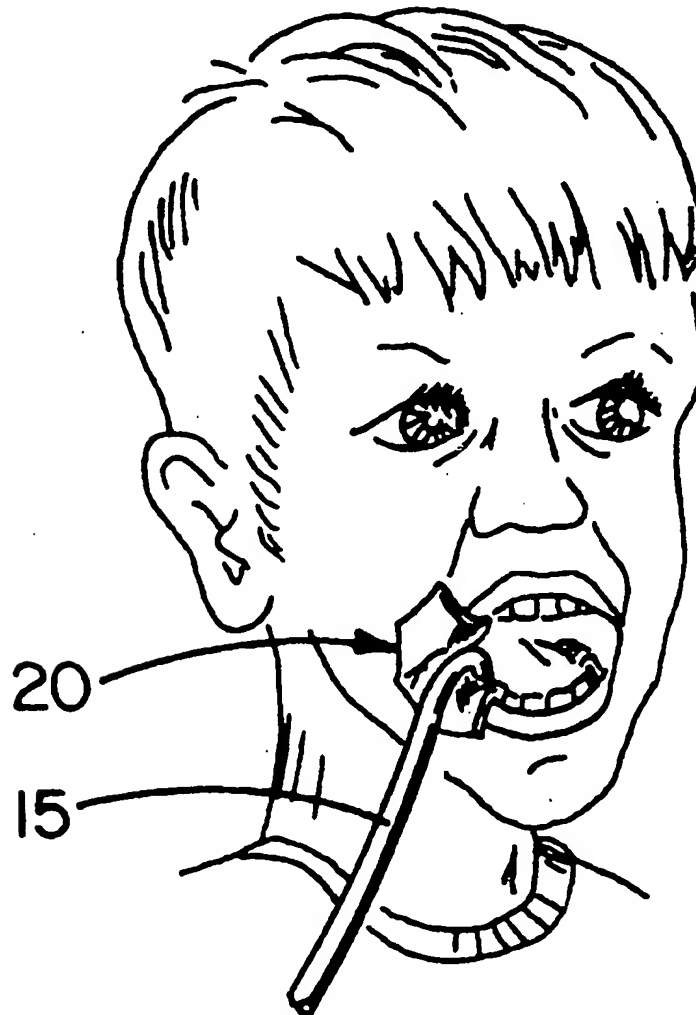
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*Primary Examiner*—Robert A. Hafer*Assistant Examiner*—Brian E. Hanlon*Attorney, Agent, or Firm*—Leydig, Voit & Mayer

[57]

**ABSTRACT**

The guard is made of soft flexible material and includes a pair of hinged wings adapted to be placed in straddling relation with the cheek of a dental patient. A forwardly facing and generally V-shaped throat is formed in the forward margins of the wings and cradles and cushions a dental instrument to prevent the instrument from causing sores in the corner of the patient's mouth.

**7 Claims, 2 Drawing Sheets**

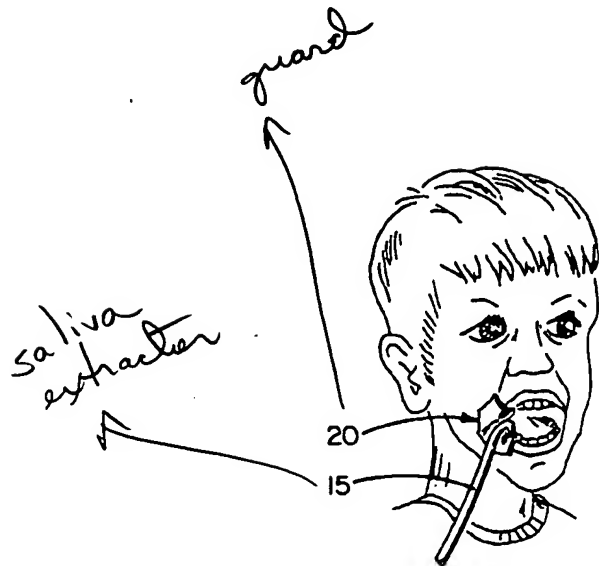


FIG. 1

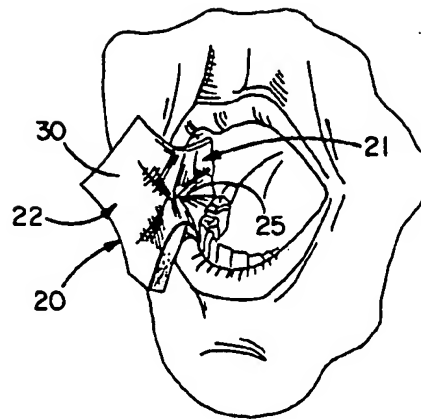


FIG. 2

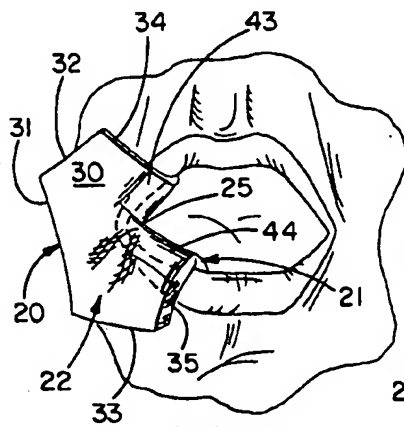


FIG. 3

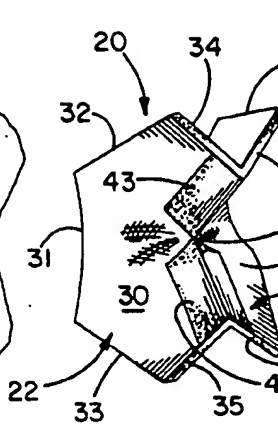


FIG. 4

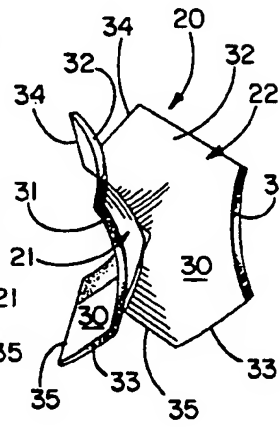


FIG. 5

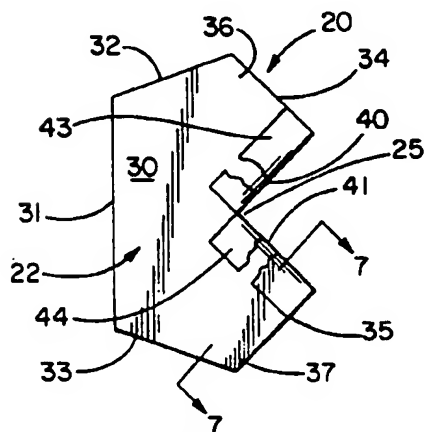


FIG. 6

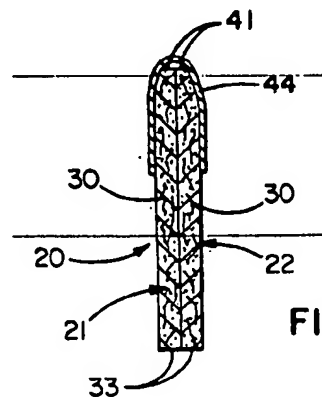
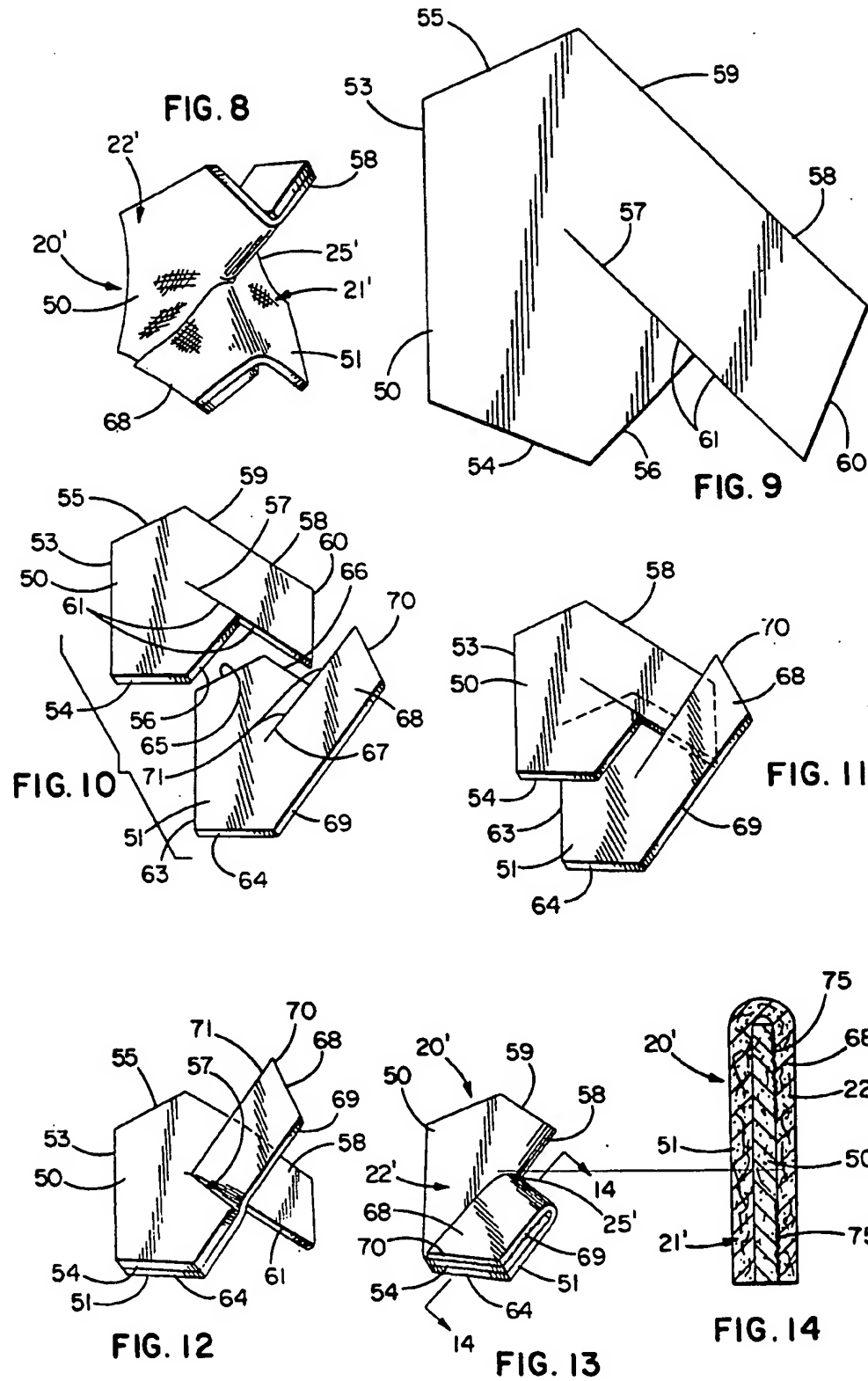


FIG. 7



## GUARD FOR PROTECTING THE CORNER OF A PATIENT'S MOUTH

### BACKGROUND OF THE INVENTION

One of the most common patient complaints involving dental procedures is the constant irritation of the corners of the patient's mouth by saliva extractors and other dental instruments. When, for example, a saliva extractor is hung in the corner of the mouth for a significant period of time, the rubbing and pressure can cause small splits that may take days or even weeks to heal. Other dental instruments pressing against the corners of the mouth also may irritate the corners and cause painful and difficult-to-heal sores. Medical instruments used during medical procedures can result in similar problems.

### SUMMARY OF THE INVENTION

The general aim of the present invention is to provide a new and improved guard which may be easily and securely placed in the mouth to protect the corner thereof from irritation otherwise resulting from dental instruments or medical instruments.

A more detailed object of the invention is to achieve the foregoing by providing a guard having a pair of soft flexible wings adapted to straddle the cheek adjacent the corner of the mouth and formed with a throat for cradling the instrument and for establishing a cushion between the instrument and the corner of the mouth.

A further object of the invention is to provide a guard which provides little or no interference with the dental procedure being performed, which clings to the inner and outer sides of the cheek, and which flexes vertically as the mouth is opened and closed.

The invention also resides in the economical formation of the guard from two identical pieces of soft and flexible material and in the manner of securing the pieces together to form a pair of hinged wings which define an instrument-receiving throat.

These and other objects and advantages of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view showing one embodiment of a new and improved guard of the invention in the mouth of a dental patient and showing the guard protecting the corner of the mouth against irritation by a typical dental instrument.

FIG. 2 is an enlarged perspective view showing the guard in the mouth from a different angle and without the dental instrument.

FIG. 3 is a view generally similar to FIG. 2 but shows the guard as seen directly from in front of the patient's face.

FIG. 4 is an enlarged perspective view of the guard of FIG. 3 as seen from the front thereof.

FIG. 5 is a perspective view of the guard of FIG. 3 as seen from the rear thereof.

FIG. 6 is a side elevational view of the guard shown in FIGS. 3 to 5.

FIG. 7 is an enlarged cross-section taken along the line 7-7 of FIG. 6.

FIG. 8 is a view similar to FIG. 4 but shows another embodiment of a mouth corner guard incorporating the unique features of the present invention.

FIG. 9 is an enlarged side elevational view of one of the two pieces of material used to make the corner guard of FIG. 8.

FIGS. 10, 11, 12 and 13 are perspective views schematically showing successive steps of assembling the two pieces of material in order to make the corner guard of FIG. 8.

FIG. 14 is an enlarged cross-section taken along the line 14-14 of FIG. 13.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 of the drawings shows a dental patient with a dental instrument 15 (herein, a saliva extractor) in one corner of his mouth. As is well known, if an instrument such as the extractor 15 is allowed to hang from the corner of the mouth for any significant period of time, the weight of the extractor together with the rubbing thereof against the moist corner can cause slits or other sores to develop in the corner at and near the area of contact. Sores of this type can be painful and may not heal for many days.

The present invention contemplates the provision of a unique guard 20 which fits securely in the mouth to cradle and cushion the instrument 15 and to prevent the instrument from rubbing against and irritating the corner of the mouth. The corner guard 20 of the invention is particularly characterized in that it clings securely but comfortably in the mouth, provides a cradle for the instrument, flexes readily when the mouth is opened and closed, and presents very little obstruction to the dental operation being performed.

In general, the guard 20 comprises inner and outer wings 21 and 22 adapted to straddle the patient's cheek adjacent one corner of the mouth and adapted to lie along and cling to the inner and outer sides, respectively, of the cheek. The forward margins of the two wings are shaped to define a forwardly facing and substantially V-shaped throat 25 which forms a cradle for the instrument 15, the apex of the throat being located substantially at the corner of the mouth. In addition, the V-shaped throat promotes vertical flexure of the guard 20 and allows the patient to freely open and close his mouth while the guard is in place.

Although the corner guard could be of one-piece molded construction, in the embodiment of the corner guard 20 specifically shown in FIGS. 1 to 7, the wings 21 and 22 are made of two separate but identical pieces or halves 30 of soft and flexible material such as embossed and reinforced non-woven paper cloth backed by a very thin plastic sheet. While various soft and flexible materials such as cotton, paper, foam or plastic may be used, the preferred material is one sold under the trade designator MICRODON. The material has a thickness of approximately 0.040" and need not necessarily be absorbent as long as it is soft and flexible.

Each of the halves 30 for making the wings 21 and 22 includes an upright rear edge 31 (FIG. 6), a back upper edge 32 extending upwardly and forwardly from the upper end of the rear edge 31 at an obtuse angle relative thereto, and a back lower edge 33 extending downwardly and rearwardly from the lower end of the rear edge 31 at the same obtuse angle. A front upper edge 34 extends downwardly and forwardly from the upper end of the back upper edge 32 while a front lower edge 35

extends upwardly and forwardly from the lower end of the back lower edge 33. As a result of this arrangement, each of the halves 30 is formed with an upper generally triangular portion 36 and with a lower generally triangular portion 37.

In carrying out the invention, the forward margin of each of the halves 30 is formed with a forwardly opening and generally V-shaped notch. When the two halves 30 are assembled to form the wings 21 and 22, the notches in the two halves coact to form the V-shaped throat 25 of the guard 20. Herein, each notch includes an upper edge 40 (FIG. 6) which extends downwardly and rearwardly from the lower end of the front upper edge 34. In addition, each notch includes a lower edge 41 which extends upwardly and rearwardly from the upper end of the front lower edge 35. The two edges 40 and 41 of each notch are disposed substantially perpendicular to one another, each edge being inclined approximately at a 45 degree angle.

The two halves 30 are assembled by superimposing the halves in face-to-face relation with the halves located such that the edges 31 to 35 and the edges 40 and 41 of each half are aligned with the corresponding edges of the other half. Upper and lower flexible connectors 43 and 44 then are used to secure the halves to one another. In the embodiment of FIGS. 1 to 7, each of the connectors is in the form of a strip of tape having pressure sensitive adhesive on one side thereof. The upper tape 43 is folded around the upper edges 40 of the V-shaped notches and is adhesively secured to the outboard sides of the two halves 30. Similarly, the lower tape 44 is folded around the lower edges 41 of the notches and also is secured to the outboard sides of the two halves (see FIG. 7).

Thus, the upper and lower tapes 43 and 44 join the two identical halves 30 to one another so as to form the wings 21 and 22. In addition, the tapes define hinges permitting the wings to be spread apart and placed in straddling relation with the patient's cheek. Finally, the two tapes 43 and 44 define the surfaces of the throat 25 and are the surfaces which are actually engaged by the instrument 15.

The corner guard 20 is used by spreading the wings 21 and 22 as permitted by the tapes 43 and 44 and placing the wings in straddling relation with the patient's cheek while crowding the wings rearwardly such that the apex of the throat 25 is against or closely adjacent the corner of the mouth. Thus, the wing 21 lies inside of the cheek while the wing 22 lies outside of the cheek. The V-shaped throat 25 conforms generally to the shape of the corner of the mouth and defines a cradle for receiving the instrument 15. Because the material of the guard 20 is soft, it forms a cushion between the instrument and the corner of the mouth and reduces irritation otherwise caused by the instrument pressing on and rubbing against the corner.

As shown in FIG. 2, the inner wing 21 of the guard 20 is located between the inner side of the patient's cheek on the one hand and between the adjacent teeth and gums on the other hand. Thus, the guard is held securely in place and is held away from the tongue and from the area where the dental operation is being performed. In addition, the outer wing 22 tends to spring inwardly against the outer side of the cheek and also helps hold the guard in place.

The V-shaped throat 25 also imparts vertical flexibility to the guard 20 and allows the wings 21 and 22 to flex vertically about the apex of the throat as the pa-

tient's mouth is opened and closed. When the patient closes and then opens his mouth, the resilient memory of the material of the guard tends to cause the wings to return vertically to their original positions.

A modified guard 20' is shown in FIGS. 8 to 14 and is identical in function and similar in overall structure to the guard 20 of the first embodiment in that the guard includes inner and outer wings 21' and 22' and a forwardly facing and generally V-shaped throat 25'. The guard 20', however, does not require tapes similar to the tapes 43 and 44 of the first embodiment and lends itself to a more automated and higher speed assembly process.

More specifically, the guard 20' is formed by two soft and flexible pieces or halves 50 and 51 which are identical in shape but which are located in different orientations during assembly. The half 50 is shown in FIG. 9 and includes a body with an upright rear edge 53, a lower edge 54 extending downwardly and forwardly from the lower end of the rear edge, and an upper edge 55 extending upwardly and forwardly from the upper end of the rear edge. In addition, the half 50 includes a front edge 56 extending upwardly and forwardly from the lower end of the lower edge 54 and further includes an edge 57 extending upwardly and rearwardly from the forward end of the front edge 57.

The half 50 is completed by a projecting tab 58 integral with the body and having a top edge 59 extending downwardly and forwardly from the upper end of the upper edge 55. In addition, the tab 58 includes a forward edge 60 extending downwardly from the lower end of the top edge 59 and further includes a bottom edge 61 extending upwardly and rearwardly from the lower end of the forward edge 60. The bottom edge 61 of the tab 58 intersects the front edge 56 of the body at right angles and continues rearwardly past such edge in parallel relation with the edge 57. In effect, the edge 57 and the upper rear portion of the edge 61 form a slit in the half 50 and indeed are formed by slitting the half 50.

The half 51 is identical in size and shape to the half 50 but, prior to final assembly, is inverted 180 degrees relative to the half 50 about a horizontal axis disposed in the plane of the paper. Thus, the half 51 includes a body with an upright rear edge 63 (FIG. 10), a lower edge 64 extending downwardly and forwardly from the lower end of the rear edge, and an upper edge 65 extending upwardly and forwardly from the upper end of the rear edge. Moreover, the half 51 includes a front edge 66 extending downwardly and forwardly from the upper end of the upper edge 65 and further includes an edge 67 extending downwardly and rearwardly from the forward end of the front edge 66.

As shown most clearly in FIG. 10, the half 51 also includes a projecting tab 68 integral with the body and having a bottom edge 69 extending upwardly and forwardly from the lower end of the lower edge 64, a forward edge 70 extending upwardly from the bottom edge 69, and a top edge 71 extending downwardly and rearwardly from the upper end of the forward edge 70. The top edge 71 intersects the front edge 66 at 90 degrees and continues rearwardly past such front edge in parallel relation with the edge 67 so that, in effect, a slit is defined between the edges 67 and 71.

Assembly of the halves 50 and 51 is effected by orienting the halves relative to one another as shown in FIG. 10 such that the tab 58 extends downwardly while the tab 68 extends upwardly. The two halves then are slid edgewise into face-to-face relation and are located

5

such that the edges 53, 54 and 55 of the half 50 are aligned with the edges 63, 64 and 65 of the half 51. As an incident to sliding the halves into face-to-face relation, the tab 58 is slipped into the slit between the edges 67 and 71 while the tab 68 is slipped into the slit between the edges 57 and 61. The tab 58 then is folded over the edge 67 and against the outboard side of the half 51 and is bonded to such outboard side either by one or more spots of adhesive or by heat sealing. Similarly, the tab 68 is folded over the edge 57 and is bonded to the outboard side of the half 50 by adhesive or heat sealing. The bond between the tab 68 and the outboard side of the half 50 is shown schematically in FIG. 14 and is designated as 75.

Once the tabs 58 and 68 have been bonded, the half 50 and the tab 68 form the wing 22' while the half 51 and the tab 58 form the wing 21'. The folded portions of the tabs define hinges permitting the wings to be spread apart and, in addition, the folded portions of the tabs define the surfaces of the V-shaped throat 25' for receiving the instrument 15.

While the invention has been described specifically in connection with a dental procedure, it should be appreciated that the guard 20, 20' may be used equally well in medical procedures to protect the corner of the patient's mouth from medical instruments.

I claim:

1. A guard for helping prevent an instrument from injuring the corner of a patient's mouth during a dental or medical procedure; said guard being made of soft and flexible material and comprising inner and outer wings adapted to straddle the patient's cheek adjacent said corner and to lie along the inner and outer sides, respectively, of the cheek, each of said wings having a free rear edge port having a forward margin, the forward margins of said wings being joined to one another in such a manner as to permit the wings to be spread away from one another placed in straddling relation with the patient's cheek and a substantially V-shaped and forwardly facing throat in the forward margins of said wings for receiving the instrument, said throat having upper and lower sides which converge an apex located substantially at said corner.

2. A guard as defined in claim 1 in which each of said wings includes inboard and outboard sides and is formed by a separate flat piece of said material, each of said pieces including a forward edge formed with a generally V-shaped and forwardly opening notch having upper and lower edges, said pieces being identical and being superimposed in face-to-face relation with the notch in each piece disposed in alignment with the notch in the other piece so as to define said throat, an upper flexible connector secured to the outboard sides of said wings and extending around the upper edges of said notches, and a lower flexible connector secured to the outboard sides of said wings and extending around the lower edges of said notches, said connectors joining said wings to one another and flexing to permit said wings to be spread away from one another and placed in straddling relation with the patient's cheek.

3. A guard as defined in claim 2 in which each of said connectors comprises a piece of flexible material adhered to the outboard sides of said wings and folded around the respective edges of said notches.

4. A guard as defined in claim 3 in which each of said connectors is a strip of pressure sensitive tape.

5. A guard as defined in claim 2 in which each of said flat pieces includes (a) an upright rear edge, (b) back

6

upper and back lower edges extending forwardly from said rear edge at substantially equal obtuse angles, (c) a front upper edge extending downwardly and forwardly from said back upper edge and joining the upper edge of said notch, and (d) a front lower edge extending upwardly and forwardly from said back lower edge and joining the lower edge of said notch.

6. A guard as defined in claim 1 in which said wings are formed by first and second identically shaped but differently oriented flat pieces of material having first and second tabs, respectively, said first tab being folded over and bonded to said second piece, said second tab being folded over and bonded to said first piece, the bonding of said tabs to said pieces joining said wings and permitting the wings to be spread away from one another, said throat being defined by portions of said tabs.

7. A guard as defined in claim 1 in which said wings are formed by first and second identically shaped but differently oriented flat pieces of said material, each of said pieces having (a) an upright rear edge, (b) a lower edge extending downwardly and forwardly from the lower end of said rear edge, and (c) an upper edge extending upwardly and forwardly from the upper end of said rear edge, said first piece including a front edge extending upwardly and forwardly from the lower end of the lower edge of said first piece and further including an additional edge extending upwardly and rearwardly from the forward end of said front edge, said first piece including an integral first tab having (a) a top edge extending downwardly and forwardly from the upper end of the upper edge of said first piece, (b) a forward edge extending downwardly from said top edge, and (c) a bottom edge extending upwardly and rearwardly from the lower end of said forward edge, the bottom edge of said tab intersecting said front edge and continuing rearwardly past said front edge in parallel relation with said additional edge, said second piece including a front edge extending downwardly and forwardly from the upper end of the upper edge of said second piece and also including a further edge extending downwardly and rearwardly from the forward end of the front edge of the second piece, said second piece including an integral second tab having (a) a bottom edge extending upwardly and forwardly from the lower end of the lower edge of said first piece, (b) a forward edge extending upwardly from the upper end of the bottom edge and (c) a top edge extending downwardly and rearwardly from the upper end of the forward edge of the second tab, the top edge of said second tab intersecting the front edge of said second piece and continuing rearwardly past such front edge in parallel relation with said further edge, portions of said first and second pieces being in face-to-face relation and located with said rear edges in alignment with one another, with said lower edges in alignment with one another and with said upper edges in alignment with one another, said first tab being folded over and bonded to said second piece and being located with its top edge in alignment with the front edge of the second piece and with its forward edge in alignment with the upper edge of the second piece, said second tab being folded over and bonded to said first piece and being located with its bottom edge in alignment with the front edge of the first piece and with its forward edge in alignment with the lower edge of the first piece.

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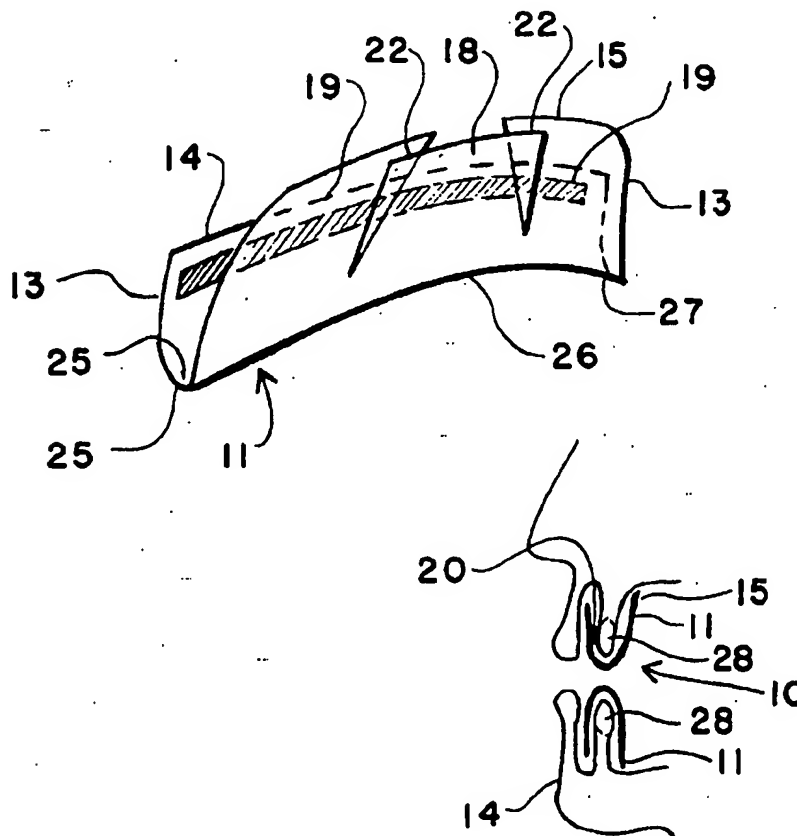
**United States Patent** [19][11] Patent Number: **5,462,067****Shapiro**[45] Date of Patent: **Oct. 31, 1995****[54] DEVICE FOR HYGIENIC PROTECTION OF THE TEETH AND GUMS****[76] Inventor: Ira Shapiro, P.O. Box 174, Radio City Station, New York, N.Y. 10101****[21] Appl. No.: 292,724****[22] Filed: Aug. 18, 1994****[51] Int. Cl.<sup>6</sup> ..... A61F 5/56****[52] U.S. Cl. .... 128/861; 128/859; 433/136****[58] Field of Search .... 128/859, 860, 128/861, 862, 857, 846, 848; 602/52; 433/136, 138, 229; 2/174****[56] References Cited****U.S. PATENT DOCUMENTS**

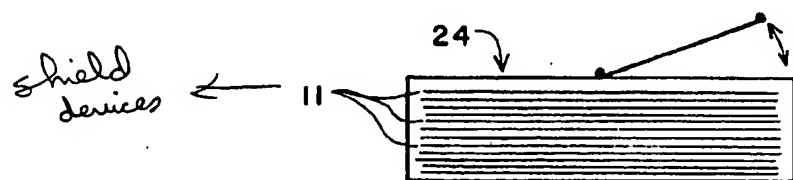
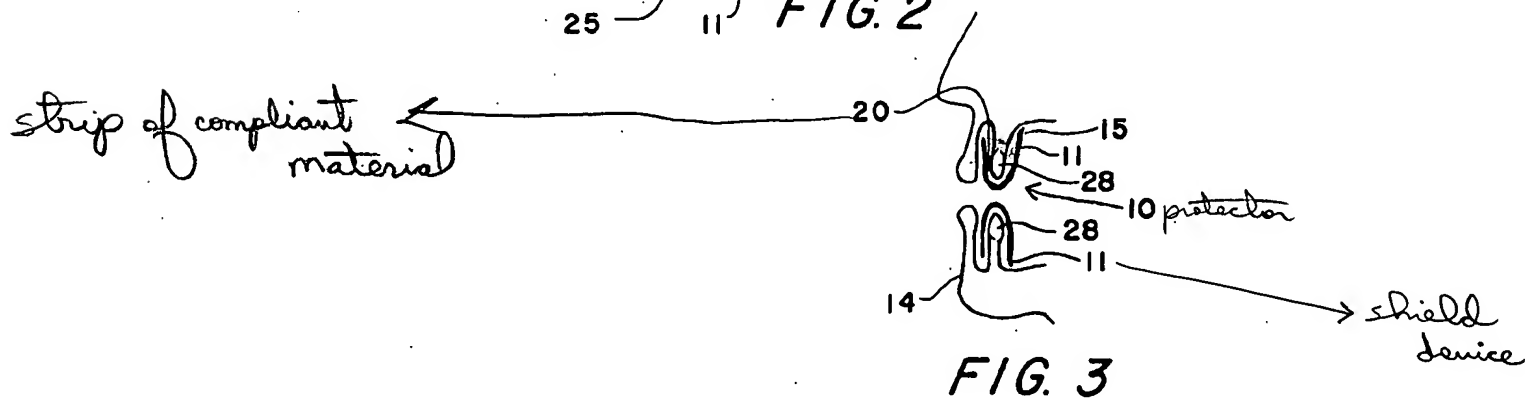
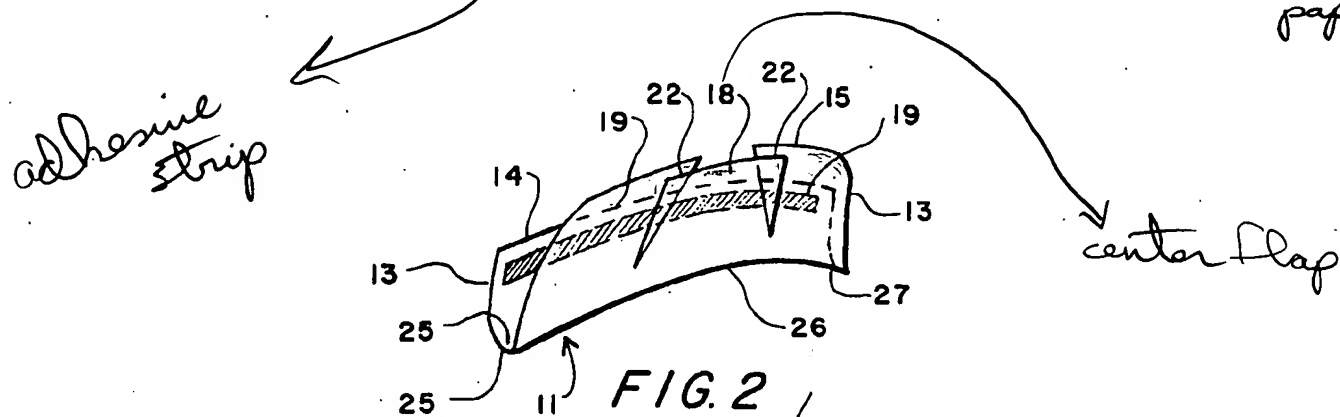
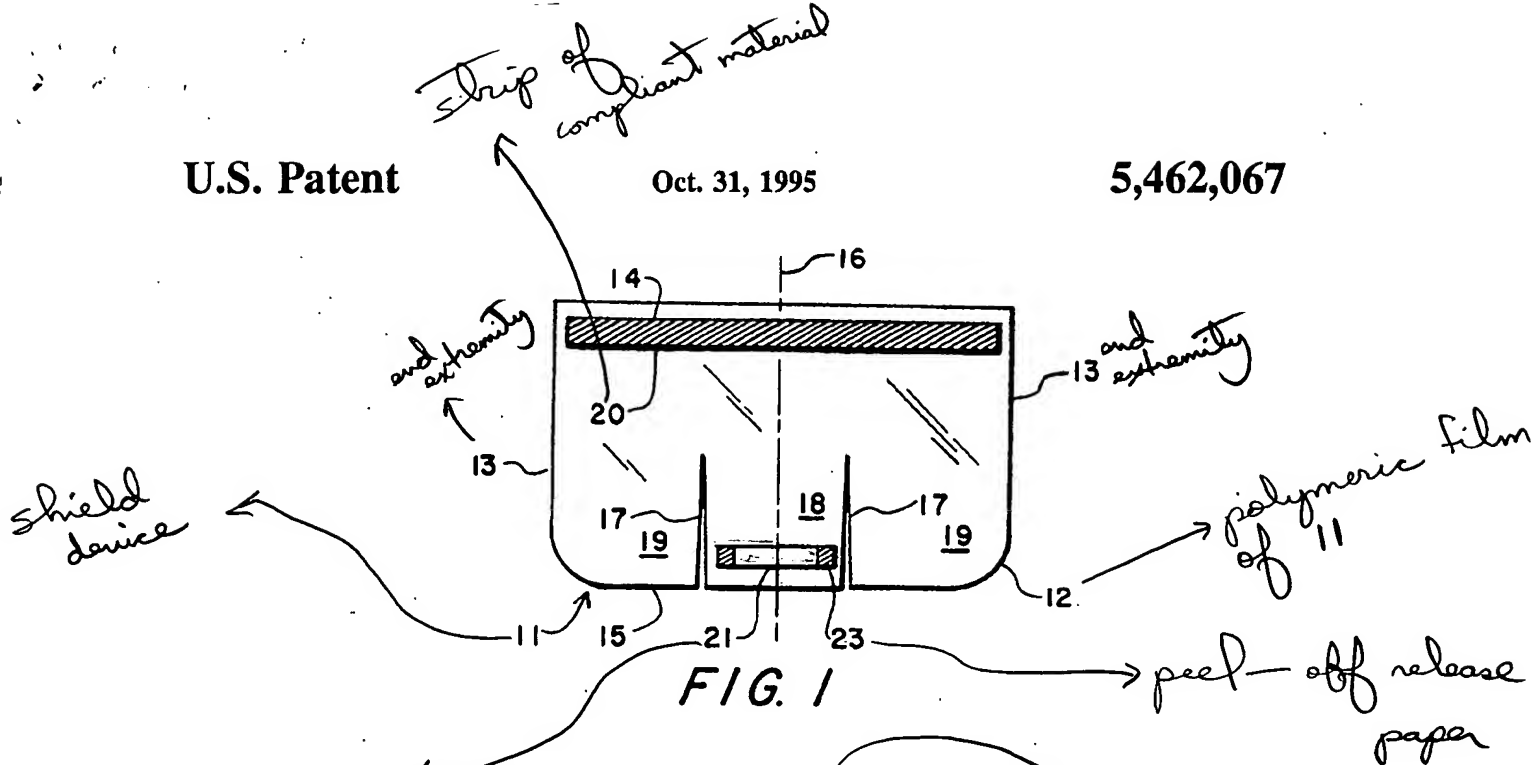
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**Primary Examiner—Robert A. Hafer****Assistant Examiner—Michael O'Neill****Attorney, Agent, or Firm—Norman B. Rainer****[57] ABSTRACT**

A disposable shield device which serves to keep food away from the gums and teeth during eating is made from an integral piece of thin plastic film having a substantially rectangular perimeter defined by opposed end edges and parallel first and second long edges. A compliant strip is positioned along the first edge for fitting against the front gum line. Two slits entering from the second edge define a center flap and paired outer flaps. An adhesive strip positioned on the center flap adjacent the second edge enable the outer flaps to securely overlap the center flap, thereby achieving close fit against the rear gum line.

**6 Claims, 1 Drawing Sheet**



## DEVICE FOR HYGIENIC PROTECTION OF THE TEETH AND GUMS

### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

This invention concerns a device to be worn in a person's mouth during eating for the hygienic protection of teeth and gums.

#### 2. Description of the Prior Art

Devices for protecting a person's teeth and mouth from injury due to impact during sports activities are disclosed in

U.S. Pat. Nos. 3,247,844; 3,457,916; 3,496,936; 3,864,832; 4,350,154, and elsewhere. Tooth protectors for use during dental and other medical procedures are disclosed in U.S. Pat. No. 3,513,838, and elsewhere. Such devices either prevent or interfere with normal motion of the jaw, as in chewing food.

Considerable attention is directed toward hygiene of the teeth and gums. For example, most dental authorities recommend frequent use of dental floss and a toothbrush to remove particles of food that lodge between the teeth during eating. It is often difficult for individuals to abide by a strict dental hygiene regimen, and even with conscientious attention to dental hygiene, disorders of the gums and teeth can still be produced by food particles allowed to remain between the teeth adjacent the gum line.

It is accordingly an object of the present invention to provide a disposable shield device to be worn upon the teeth and gums during chewing of food to prevent food particles from lodging between the teeth.

It is another object of this invention to provide a device as in the foregoing object which can be easily emplaced in the user's mouth.

It is a further object of the present invention to provide a device of the aforesaid nature of simple construction amenable to low cost manufacture.

It is yet another object of this invention to provide a dispensing package containing a multitude of the shield devices of the aforesaid nature in stacked relationship.

These and other beneficial objects and advantages will be apparent from the following description.

### SUMMARY OF THE INVENTION

The above and other beneficial objects and advantages are accomplished in accordance with the present invention by a gum and teeth protector comprised of a pair of shield devices each comprised of:

- a) a piece of thin, initially flat polymeric film elongated between parallel end extremities, and further bordered by straight parallel first and second edges of substantially equal length, said piece of film having two parallel slits beginning at said second edge and extending toward said first edge in orthogonal relationship thereto, said slits defining a center flap and paired outer flaps,
- b) a compliant strip disposed in association with said first edge, and
- c) adhesive means interactive between said center and outer flaps to enable said outer flaps to securably overlap said center flap, thereby effectively shortening the length of said second edge.

### BRIEF DESCRIPTION OF THE DRAWING

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawing forming a part of this specification and in which similar numerals of reference indicate corresponding parts in all the figures of the drawing:

FIG. 1 is a top plan view of an embodiment of the shield device of the present invention shown in its packaged state.

FIG. 2 is a rear perspective view showing the shield embodiment of FIG. 1 as it would appear during use.

FIG. 3 is a sectional side view showing the protector shown in association with the teeth and gums of a user of the protector.

FIG. 4 is a vertical sectional view of a storage container containing a multitude of the shield devices.

### DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGS. 1-3, an embodiment of the protector 10 of this invention is shown comprised of paired shield devices 11 exemplified as being of identical construction and disposed in facing upper and lower relationship.

Each shield device 11 is comprised of a thin, initially flat piece of film 12 of a polymer such as polyethylene or other polymers of comparable strength and relatively low cost. The piece of film 12 has a substantially rectangular perimeter defined by parallel end extremities 13 and by straight parallel first and second long edges 14 and 15, respectively, of substantially equal length. However, as shown in FIG. 1, the second edge in the exemplified embodiment is rounded to meet said end edge extremities. The piece of film has a plane of symmetry 16 that vertically bisects the film between end extremities 13.

Film 12 has two parallel slits 17 that begin at second edge 15 and proceed toward first edge 14. Said slits create center flap 18 and embracing outer flaps 19.

A strip 20 of compliant material is attached to the film along first edge 14. By "compliant", it is meant that strip 20, initially flat and coplanar, can be manipulated to achieve different contours which remain even when the deformational force is removed. Typical materials which may be utilized for strip 20 include cardboard and certain plastics containing a high percentage of fillers such as talc, having plate-like crystal structure. The height of the film, measured between first and second edges, may range from about 1½ to 2¼ inches. The length of the film, measured between end extremities 13 may range from about 2½ to 3½ inches. The thickness of the film may range between 1 mil and 5 mils.

Adhesive means, in the form of adhesive strip 21 is disposed upon center flap 18, and adapted to secure said outer flaps when said outer flaps are moved so as to partially overlap said center flap. Such disposition is shown in FIG. 2, wherein the overlapped regions 22 are of substantially triangular contour. Such securing of the overlapped outer flaps effectively shortens the length of said second edge. Suitable adhesive means include pressure-sensitive coatings having affinity for film 12 and which may be protected during storage by way of peel-off release papers 23.

In use, two of the shield devices are removed from stacked storage in a dispensing device 24 and placed in the mouth such that the first edges are disposed upon the front gum lines and the compliant strip is pressed against the gums. The film of the upper device is then drawn upwardly

3

around the lower extremities of the teeth. Release paper strip 23 is removed, and outer flaps 19 are displaced toward center flap 18 so that a snug fit is secured. Outer flaps 19 are then pressed against adhesive means 21, causing securement of all three flaps. In such emplaced state, the device has a curved, trough-like shape, the bottom of the trough 25 accommodating the tips of teeth 28. It is to be noted that, when properly emplaced, second edge 15 will be above first edge 14 in said upper device.

With respect to the lower device, placement is similar to that of the upper device except that certain positional relationships are symmetrically inverted. After use, the devices may be discarded.

In certain embodiments, supplementary adhesive, such as the paste products currently employed to secure dentures, may be used to further enhance retention of the shield devices. The lower surface 26 of film 12 may be provided with a zone of toughened texture 27 along the site where upper and lower teeth come together. The toughened texture provides better gripping of food during chewing.

While particular examples of the present invention have been shown and described, it is apparent that changes and modifications may be made therein without departing from the invention in its broadest aspects. The aim of the appended claims, therefore, is to cover all such changes and modifications as fall within the true spirit and scope of the invention.

Having thus described my invention, what is claimed is:

1. A gum and teeth protector comprised of:

4

- a) a piece of thin, initially flat polymeric film having a substantially rectangular perimeter defined by parallel end edges and straight parallel first and second edges of substantially equal length, said piece of film having two parallel slits beginning at said second edge and extending toward said first edge in orthogonal relationship thereto, said slits defining a center flap and paired outer flaps, the height of said piece of film, measured between said first and second edges being between 1½ to 2½ inches,
  - b) a compliant strip disposed in association with said first edge, and
  - c) adhesive means interactive between said center and outer flaps to securably overlap said center flap, thereby effectively shortening the length of said second edge.
2. The protector of claim 1 wherein the length of the piece of film, measured between said end extremities, is between 2½ and 3½ inches.
  3. The protector of claim 2 wherein the thickness of said piece of film is between 1 and 5 mils.
  4. The protector of claim 3 wherein overlapping of said outer flaps defines regions of triangular contour.
  5. The protector of claim 4 wherein said adhesive means is a pressure-sensitive coating protected by a peel-off release paper.
  6. A dispensing device comprising a multitude of the protectors of claim 5 stacked in flat form.

\* \* \* \* \*



US006328756B1

(12) **United States Patent**  
**Amernick**

(10) **Patent No.:** **US 6,328,756 B1**  
 (45) **Date of Patent:** **Dec. 11, 2001**

(54) **PAD FOR PREVENTING AND/OR  
 RETARDING THE APPEARANCE OF AND/  
 OR FOR TREATING FACIAL WRINKLES,  
 METHODS OF FORMING THE PAD, AND  
 METHOD OF USING THE PAD**

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(\*) **Notice:** Subject to any disclaimer, the term of this  
 patent is extended or adjusted under 35  
 U.S.C. 154(b) by 0 days.

(21) **Appl. No.:** **09/484,220**

(22) **Filed:** **Jan. 18, 2000**

#### **Related U.S. Application Data**

(63) Continuation of application No. 08/377,357, filed on Jan. 24,  
 1995, now abandoned.

(51) **Int. Cl.<sup>7</sup>** ..... **A61F 5/08; A61F 13/00**

(52) **U.S. Cl.** ..... **606/204.15; 604/304**

(58) **Field of Search** ..... **602/40, 41; 604/204.15,  
 604/204.35; 128/859, 860, 861, 862**

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\* cited by examiner

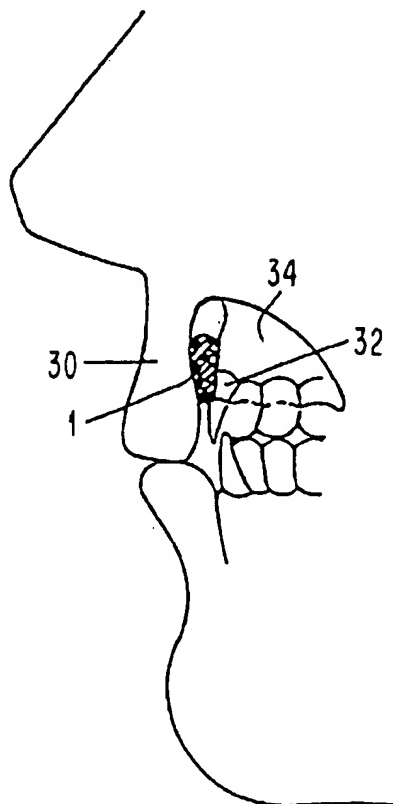
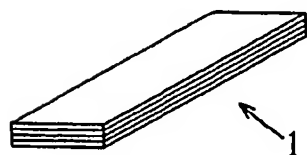
*Primary Examiner*—Kim M. Lewis

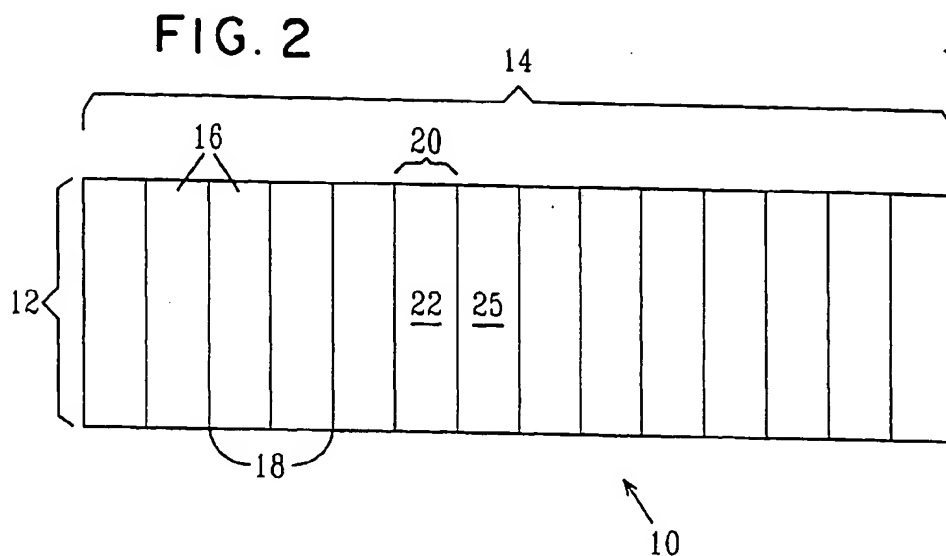
(74) *Attorney, Agent, or Firm*—Connelly Bove Lodge &  
 Hutz

(57) **ABSTRACT**

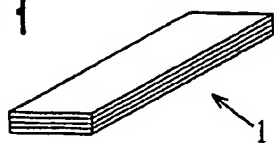
A pad for preventing and/or retarding the appearance of  
 and/or for treating facial wrinkles and particularly wrinkles  
 of the upper lip. The pad includes a plurality of segments of  
 tissue stacked on top of each other. The segments have a  
 longer dimension of from about one to about six inches and  
 a shorter dimension of from about one-quarter to about  
 three-quarters of an inch.

**13 Claims, 1 Drawing Sheet**

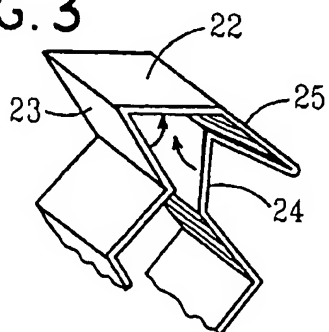




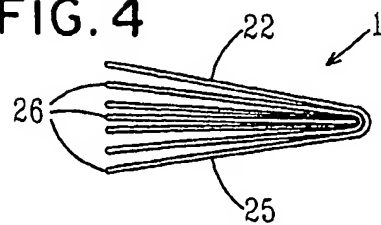
**FIG. 1**



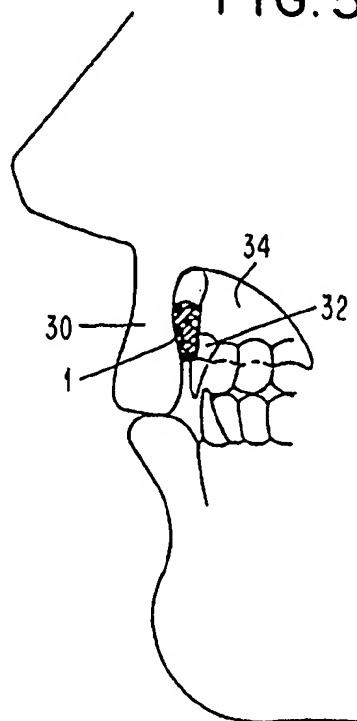
**FIG. 3**



**FIG. 4**



**FIG. 5**



1

**PAD FOR PREVENTING AND/OR  
RETARDING THE APPEARANCE OF AND/  
OR FOR TREATING FACIAL WRINKLES,  
METHODS OF FORMING THE PAD, AND  
METHOD OF USING THE PAD**

**CROSS-REFERENCE TO RELATED  
APPLICATION**

This application is a continuation of U.S. patent application Ser. No. 08/377,357 filed Jan. 24, 1995 now abandoned.

**FIELD OF THE INVENTION**

The invention relates to devices for treating and/or preventing and/or retarding process of the wrinkling of a person's skin. In particular, the invention relates to a pad for placing inside a person's mouth, between the lips and/or cheeks and the gums to help treat and/or prevent and/or retard the process of wrinkling, especially around the person's mouth, and particularly the upper lip.

**BACKGROUND OF THE INVENTION**

In our appearance conscious society, people often judge others based upon physical appearance, including weight, hair style or existence, and skin appearance, among other things. This is especially true of women. To address concerns that they may be discriminated against based upon their appearance, people increasingly concentrate on improving or treating their outward appearance, particularly to conform to popular ideals of beauty. People make efforts an a variety of fronts to maintain a youthful appearance. For example, people diet, exercise, and take vitamins, among other things.

One of the most visible parts of a person's appearance is his or her face. Accordingly, people increasingly address perceived imperfections on the face. For instance, people have face lifts, or nose jobs or treat imperfections in the skin as a consequence of the appearance consciousness of our society.

As we age, wrinkles often appear in our skin. Wrinkles affect people most significantly when the wrinkles appear on the face since the face is often the part of the body that is usually exposed. Although this problem affects all people, wrinkles are especially worrisome for women, particularly as they approach and are in middle and/or old age, given the much greater emphasis on the maintenance of a youthful appearance of women in our society. Often, people treat wrinkles with lotions, creams, facial wraps, facial scrubs, facial massages, and other treatments, including prescription pharmaceuticals. Frequently, people turn to more drastic treatments that require administration by a physician. More drastic treatments include having materials, such as collagen, injected under the skin of the face or having plastic surgery performed.

Downsides of existing treatments for facial skin wrinkles, particularly the more drastic and risky procedures described above, include excessive time and cost and possible unknown and negative side effects. For instance, plastic surgery is quite costly and surgery always has associated risks. Also, it is known that the effects of collagen injected into, a person's lips, is temporary and, therefore, requires repetitive trips to a physician for retreatment. Also, compounds, such as RETIN-A have some harmful side effects.

**SUMMARY OF THE INVENTION**

The inventor of the present invention recognized the problems associated with existing treatments for facial

2

wrinkles and developed the present invention to provide solutions to these problems.

Accordingly, one object as well as advantage of the present invention is to reduce the cost of treating facial wrinkles as compared to known treatments.

Another object and advantage of the present invention is to reduce or eliminate side effects associated with known treatments for facial wrinkles.

A further object and advantage of the present invention is to prevent and/or retard the appearance of and/or to provide a simple treatment for facial wrinkles.

In accordance with these and other objects, the present invention provides a pad for preventing and/or retarding the appearance of and/or for treating facial wrinkles. The pad includes a plurality of segments of tissue stacked on top of each other. The segments typically have a longer dimension of from about one to about six inches and a shorter dimension of from about one-quarter to about three-quarters of an inch.

According to other aspects, the present invention provides a method of making a pad for preventing and/or retarding the appearance of and/or for treating facial wrinkles. The method includes the steps of forming a pad from a plurality of layers of an absorbent material, and placing the pad in a mouth of a person between a gum and/or tooth or teeth and an inner surface of a cheek or lip of the person.

According to further additional preferred aspects, the present invention provides a method of preventing and/or retarding the appearance of and/or for treating facial wrinkles. The method includes the step of forming a pad from a plurality of layers of an absorbent material. The pad is placed into a mouth of a person between a gum and/or tooth or teeth and an inner surface of a cheek or lip of the person.

Still other objects and advantages of the present invention will become readily apparent those skilled in this art from the following detailed description. The detailed description shows and describes only the preferred embodiments of the invention, simply by way of illustration of the best mode contemplated of carrying out the invention. As will be realized, the invention is capable of other and different embodiments. The details of the present invention may be modified in various obvious respects, without departing from the invention. Accordingly, the drawings and description are to be regarded as illustrative in nature and not as restrictive.

**BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 represents a perspective view of one embodiment of a pad for preventing and/or retarding the appearance of and/or for treating facial wrinkles according to the present invention;

FIG. 2 represents an overhead view of an embodiment of a sheet of absorbent material from which a pad according to the present invention, such as the embodiment shown in FIG. 1, may be formed;

FIG. 3 represents a side view of the sheet of absorbent material shown in FIG. 2 in a partially folded condition;

FIG. 4 represents a side view of an embodiment of a folded pad formed from the sheet shown in FIG. 2; and

FIG. 5 represents a perspective view of an embodiment of a pad according to the present invention placed between a person's gums and teeth and an inner surface of their mouth opposite their upper lip.

**DETAILED DESCRIPTION OF VARIOUS AND  
PREFERRED EMBODIMENTS OF THE  
INVENTION**

FIG. 1 shows a perspective view of an embodiment of a pad for preventing and/or retarding the appearance of and/or

3

for treating facial wrinkles. The embodiment shown in FIG. 1 includes a plurality of layers of an absorbent material. Preferably, the absorbent material is facial or another type of tissue. However, other absorbent materials may also be used to form the pad. For instance, toilet tissue, among other materials, may also be used. Preferably, the absorbent material is also at least somewhat pliable so as to increase the user's comfort.

Some materials provide less favorable results than the results provided by the present invention. For example, cotton and gauze do not work as well as the tissue used according to the present invention. The tissue of the present invention was found by the inventor to provide unexpectedly favorable results both in functioning to prevent and/or retard the appearance of and/or for treating facial wrinkles. The inventor also discovered that tissue also provided unexpectedly good results regarding user comfort. Cotton and gauze and related products provide less overall comfort.

According to a preferred embodiment, a pad according to the present invention is SCOTTIES brand facial tissue. Facial tissue has been found to provide a pad more effective in preventing and/or retarding the appearance of and/or for treating facial wrinkles. Typically, facial tissue comprises a cellulosic web. Such webs may have a basis weight of from about 20 g/m<sup>2</sup> to about 60 g/m<sup>2</sup>. However, facial tissue of any basis weight may be used. Those skilled in the art of facial tissue manufacture know how to form such webs.

More preferably, the facial tissue employed according to the present invention is SCOTTIES brand facial tissue manufactured by Scott Paper Company of Philadelphia, Pa. SCOTTIES brand facial tissue has a character which makes it easily adaptable to the contour of an individual's mouth and helps hold the pad firmly in position. One characteristic of SCOTTIES brand facial tissue that seems to be particularly important is its absorbency. Other characteristics that seem to make SCOTTIES brand facial tissue especially effective in the present invention include their ability to cause a pad formed from them to mold, conform, and/or dry to the shape of a person's mouth, including their teeth, gums, lips, and/or cheeks. Also, SCOTTIES brand facial tissue seems especially effective at not disintegrating and retaining its integrity. In an alternative embodiment, another type of tissue, facial or otherwise, may be used and then chemicals added or physical processes performed that would create tissue having properties similar to SCOTTIES brand facial tissue.

The embodiment of the pad shown in FIG. 1 has a width 1 of approximately one-half inch, a length of approximately 2 inches, and a thickness of approximately one-quarter inch. However, the pad may be formed in a variety of sizes. The size depends upon the application and characteristics of the person using the pad. For instance if the pad is placed at the front of the mouth, then the pad may be smaller than if placed toward the side of the user's mouth. Also, a person with a big mouth may require a bigger pad. The size of the pad may also vary depending upon the coverage within the mouth that a user desires. For example, the user may desire to cover parts of the mouth opposite the cheek and the lips simultaneously and therefore would require a longer pad.

Accordingly, a pad according to the present invention may have a width of from about one-quarter inch to about three-quarters of an inch, a length of from about one inch to about six inches, and a thickness of from about one-tenth of an inch to about one-half inch.

The layers making up the pad may be formed in a variety of ways. For instance, layers of the absorbent material to be

4

used may be provided and then joined to form the pad. The layers do not necessarily require joining. For instance, the pad may be formed from the layers and then the pad placed in the user's mouth as described below.

The layers of absorbent material used to form such an embodiment may be formed in the dimensions of the desired length and width of the pad. The layers may then be stacked on top of each other to form the pad. Prior to placing the pad in the mouth, the layers may be joined. The joining may be accomplished by placing an adhesive material on one or both sides of the interior layers of the pad prior to stacking them. Preferably, the adhesive is a pharmaceutically acceptable material. Alternatively, the layers may be joined by placing a binding element about the stack of layers.

After forming the pad, whether the layers are bound together or not, the pad may be placed in the mouth of a user as described below.

In an alternative embodiment, the pad may be formed from a sheet of absorbent material. In such an embodiment, the sheet may be divided or folded to form the pad. According to one embodiment, the sheet of absorbent material may be cut into a plurality of segments. The segments may have the same length and width as the pad that is to be formed from the segments. The segments may then be stacked on top of each other and possibly joined together, as described above.

According to another embodiment, the sheet of absorbent material may be divided into a plurality of segments. The segments may have the same length and width as the pad that is to be formed from the sheet. The segments may be formed by scoring the sheet of material or otherwise marking the sheet. The sheet may then be folded along the scores or the line. The segments may or may not be joined together as described above. The finished pad may then be inserted into a user's mouth as described below.

In still other embodiments, a series of pads may be formed and joined or separated by a series of perforations or the pads may be scored to allow them to be separated from each other. For example, extended sheets of tissue could be used to form the pad. The sheets of tissue could be stacked on top of each other or formed on top of each other. The plurality of sheets could then result in an extended pad having a thickness about the desired thickness of an individual pad according to the invention and a width about the desired longer dimension of a pad of the invention. The extended pad could then be scored or perforations could be formed in the pad. Individual pads could then be separated from the extended pad as required.

According to one embodiment of a method according to the present invention for forming pads for preventing and/or retarding the appearance of and/or for treating facial wrinkles from a sheet of absorbent material, a sheet is provided that is from about six to about ten inches long and from about one to about three inches wide. Preferably, the sheet is about eight inches long and about two inches wide. However, the size of the sheet may be varied to provide a pad giving the best fit and function for a particular user's mouth.

Referring to FIG. 2, the sheet 10 of absorbent material is divided into segments 16. The segments 16 may be formed, for instance, by forming divisions 18 in the sheet 10. Each division has a width 20 and a length 12. Preferably, the length 12 is the same as the width 20 of the sheet 10, as shown in FIG. 2. The width 20 of the sheet 10 may vary, depending upon the size of the segments 16. In the embodiment shown in FIG. 2, the sheet 10 is divided into a



5

segments 16 such that each segment has the same width 20. Therefore, the width 20 of each segment 16 is equal to the length 14 of the sheet 10 divided by the number of segments formed. The width 20 of the segments may vary, depending upon the number of segments formed. Also, the segments 16 may all have different widths.

The divisions 18 in the sheet 10 may be formed by scoring the sheet of material, by perforating the sheet, or by drawing a line indicating the divisions between segments, among other methods. In the embodiment shown in FIG. 2, the sheet of absorbent material is divided into fourteen segments 1. Both the size and number of segments 16 may be varied to create a desired thickness of the pad. Also, depending upon the size of a particular user's mouth, the number of folds may be varied to adjust the thickness of the pad and, thus, give a more comfortable fit. The length, width, and thickness of the pad may also be varied as required to ensure the effectiveness of the pad. The size of the user's teeth and gums and the amount of stretching of the facial skin and muscles desired may also cause the size of the pad to be varied.

Once the divisions 18 between the segments 16 are formed, the sheet of absorbent material may be folded to form the pad. The sheet 10 may be folded in a variety of ways. One preferred method of folding the sheet is shown in FIG. 3. FIG. 3 shows a partially folded sheet of material. According to this method, one segment will form the top of the pad. This segment is known as the top segment 22 shown in FIGS. 1 and 2.

Once identification of the top segment 22 has taken place, the segments of the sheet to the right and left of the top segment 22 are folded. According to the embodiment illustrated in FIG. 3, the sheet is folded accordion-style. Other methods of folding may also be used. The segments to the left of the top segment, as shown in FIG. 3, are first folded under the top segment. According to this embodiment, the surface of the segment 23 adjacent the top segment 22 is adjacent the bottom surface of the top segment 22.

Next, the third segment 24 to the right of the top segment, as shown in FIG. 3, is folded under the top segment. Then, the two segments between the top segment 22 and the segment 24 are folded under the segment 24 such that the surface of the segment 25 adjacent the top surface of the top segment faces downwardly, as shown in FIG. 3, away from the top segment. The remaining segments to the right of the top segment are then folded accordion-style under the pad.

The method illustrated in FIG. 3 is only one method of folding a sheet of absorbent material according to the present invention to form a pad according to the present invention. The sheet may also be folded in a variety of ways to obtain a pad of the desired length, width, and thickness.

FIG. 4 shows a pad 1 which has been formed from a sheet folded according to the method described above and shown in FIG. 3. The pad shown in FIG. 4 includes a plurality of leaves 26 formed by the folding of the sheet 10.

Other embodiments of the pad may not include a sheet of absorbent material. A pad of such material may not include individually defined layers of sheet material. Therefore, such embodiments may also be formed according to a different method than the above-described method. For example, a mass of material having the length, width, and thickness of the desired pad, either before or after compaction as would occur in a user's mouth, may be provided.

The present invention may be formed by hand from, for instance, a sheet of facial tissue. The pad may also be formed by hand from other fibrous absorbent materials, such as

6

toilet tissue. Other absorbent materials may also be used. However, facial tissue has been found to provide superior results for preventing and/or retarding the appearance of and/or for treating facial wrinkles.

A pad according to the present invention may also be formed according to a manufacturing process. The manufactured pad may be a folded pad similar to the hand made pad or may be mechanically layered to the required thickness with or without the leaves of the hand made pad. A mechanically layered pad could be formed in about the size of one of the segments of a pad formed by folding a sheet of absorbent material as described above. Such a pad could be about two inches long and about half an inch wide. One skilled in the art could make the tissue pad according to a variety of known manufacturing processes.

In addition to the above-described pad and method of forming it, the present invention also includes a method of preventing and/or retarding the appearance of and/or for treating facial wrinkles. Regardless of how the pad of the invention is formed, according to a method of the present invention, the pad may be placed in a user's mouth, between the user's teeth and/or gums and the inside surface of the user's mouth, opposite the lips, cheeks and/or any other part of the user's mouth. For instance, a pad 1 according to the invention could be placed between the user's upper lip 30 and teeth 32 and gums 34 as shown in FIG. 5. However, preferably, the pad is inserted anywhere in the user's mouth opposite where the user desires to prevent and/or retard the appearance of and/or treat facial wrinkles. For example, a pad according to the invention may be inserted into a person's mouth in a manner and/or position similar to an appliance for treating temporomandibular joint disorder. The pad is inserted to the desired degree and in the desired location and, preferably, is left there overnight. However, the pad may be used at any time of day for any period of time.

The period of time that a device according to the invention remains in a user's mouth may be sufficient to retard and/or prevent and/or treat wrinkle formation. In the context of the invention, retardation of the formation of wrinkles may mean that the time that wrinkles appear in a user's skin may be delayed. Also, retardation may mean that the time required for a wrinkle to deepen, grow longer and grow wider may be extended.

If the pad is similar to the embodiment shown in FIG. 4, then when placing the pad between the user's gum and lip, the leaves 26 should be directed away from the direction that the pad is inserted to help ensure that the pad is not pushed apart by the interior surfaces of the user's mouth as the pad is inserted. Over time, the pad tends to conform to the shape of the interior surfaces of the mouth that the pad contacts. For example, the pad may at least partially conform to the shape of at least a portion of the surface of the user's gums and/or teeth and/or at least a portion of the inner surface of the user's cheeks and/or lips.

Preferably, each pad is only used once and a fresh pad according to the present invention is placed in the user's mouth each evening and be worn for the entire night to relieve tension, puckering or other distortions in the facial skin and/or muscles, and, thus, prevent and/or retard and/or treat wrinkles and/or the wrinkling process. Upon regular use of pads of the present invention according to the method of the invention, a "muscle memory" may be created. This muscle memory may help to prevent wrinkles from forming in the facial muscles since the muscles will tend to stay in the "remembered" position. The muscle memory may also help to relieve tension in the user's upper lip and other parts of the user's face while the user is awake.

In this disclosure, there is shown and described only the preferred embodiments of the invention, but, as aforementioned it is to be understood that the invention is capable of use in various other combinations and environments and is capable of changes or modifications within the scope of the inventive concept as expressed herein.

What is claimed is:

1. A method of performing at least one function selected from the group consisting of preventing the appearance of facial wrinkles, retarding the appearance of facial wrinkles, and treating facial wrinkles, said method comprising:

a) obtaining a pad from a stack of a plurality of layers of tissue wherein said tissue is selected from the group consisting of facial tissue and toilet tissue; and wherein said pad comprises a plurality of layers of said tissue; and

b) placing said pad in a mouth of a person between at least a portion of gums and at least a portion of an inner surface of a cheek or lip of the person; and wherein said pad at least partially conforms to the shape of interior surface of said mouth that is contacted by said pad due to being placed in the mouth of said person.

2. A method according to claim 1, wherein said pad has a longer dimension of from about one to about six inches and a shorter dimension of from about one-quarter to about three-quarters of an inch.

3. A method according to claim 1, wherein said pad is inserted between at least a portion of the gums and at least a portion of an upper lip of the person.

4. A method according to claim 1, wherein said pad is formed by folding a sheet of tissue.

5. A method according to claim 1, wherein said plurality of layers are formed by forming a stack of segments of tissue.

6. A method according to claim 5, wherein said segments are provided by forming a plurality of folds in a sheet of tissue, thereby dividing said sheet of tissue into a plurality

of segments, said sheet of tissue having a longer dimension of from about six to about ten inches and a shorter dimension of from about one to about six inches, and forming said pad by folding said sheet of tissue along said folds, said pad having a length and a width approximately equal to a length and a width of one of said segments, and said pad having a thickness approximately equal to a thickness of said segments stacked on top of each other.

7. A method according to claim 1, wherein said segments are provided by forming a sheet of tissue having a longer dimension of about eight inches and a shorter dimension of about two inches, dividing said sheet of tissue into fourteen equal segments by forming folds in said sheet of tissue and forming said pad by folding said sheet of tissue along said folds, said pad having a length and width approximately equal to a length and a width of one of said segments, and said pad having a thickness approximately equal a thickness of said fourteen segments stacked on top of each other.

8. A method according to claim 1, wherein said stack is provided by mechanically layering said segments of tissue until said stack has a thickness which is approximately equal to the total thickness of fourteen layers of tissue, said pad having a longer dimension of about two inches and a shorter dimension of about one-half inch.

9. The method of claim 1 wherein said tissue is facial tissue.

10. The method of claim 9 wherein the facial tissue has a basis weight of about 20 g/m<sup>2</sup> to about 60 g/m<sup>2</sup>.

11. The method of claim 10 wherein the facial tissue is Scotties brand facial tissue.

12. The method of claim 1 wherein the pad remains in the mouth of the person overnight.

13. The method of claim 1 which further comprises discarding said pad after a single use and repeating the method.

\* \* \* \* \*



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(54) **LIP PROTECTOR**

(56) **References Cited**

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(\*) **Notice:** Subject to any disclaimer, the term of this  
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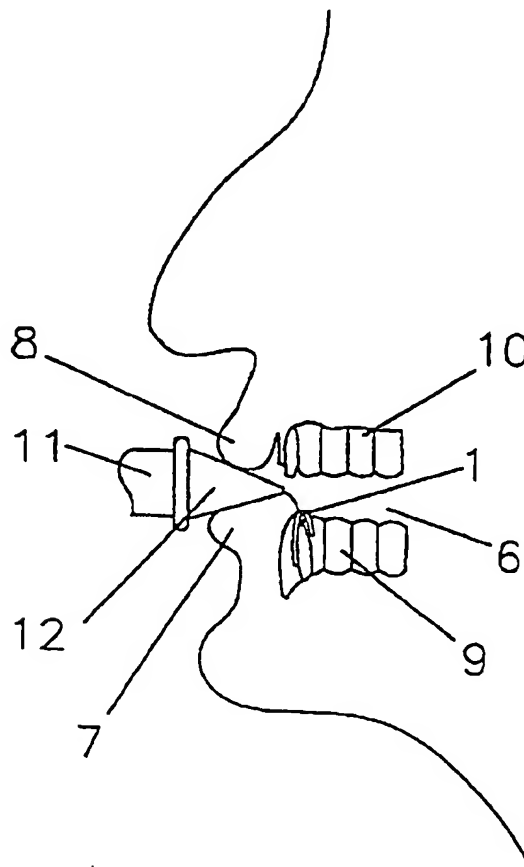
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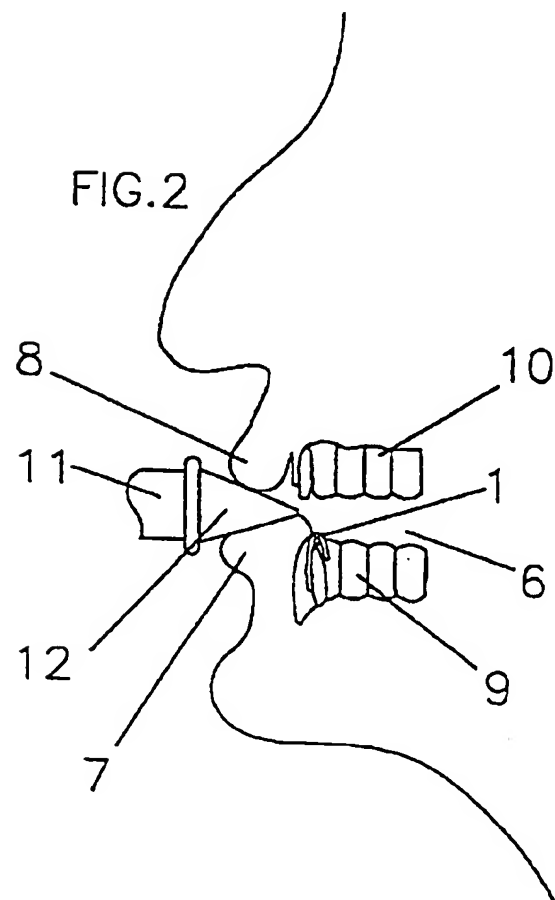
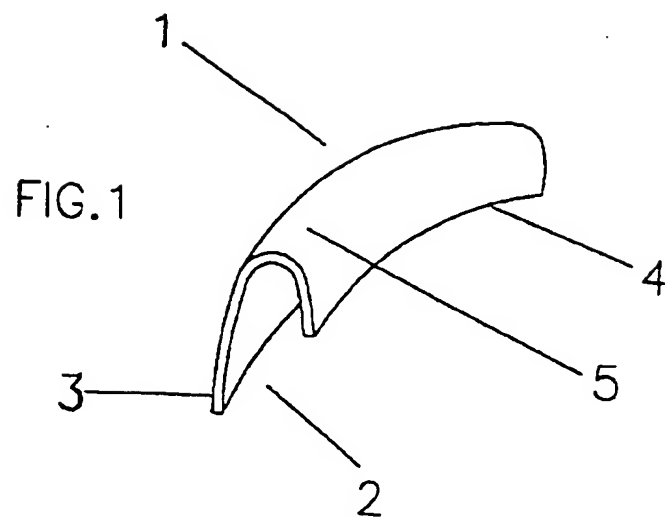
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(57) **ABSTRACT**

The invention consists of a lip protector made in one piece,  
which has been manufactured from a relatively flexible  
thermoplastic material and configured as an arched body  
showing a protective outer surface which includes a portion  
of peripheral wall at the front and has a channel running  
under it for its full length.

**1 Claim, 1 Drawing Sheet**





## LIP PROTECTOR

The invention consists of a lip protector made in one piece, which has been manufactured from a relatively flexible thermoplastic material and configured as an arched body showing a protective outer surface which includes a portion of peripheral wall at the front and has a channel running under it for its full length.

By means of the channel, the lip protector can be fitted to cover the crown of the lower dental arch of its user, for example that of a wind instrument player such as a clarinetist. The outer protective surface prevents direct contact between the dental crown and the fold of the lower lip of the instrumentalist, thus avoiding the erosion of the labial mucous membrane close to the fold which frequently occurs among these instrumentalists, due to the fact that the mouthpiece of the instrument rests on it and rubs against it.

The aim of the invention is to supply the market with a lip protector for wind instrument players or other users, designed in an efficient manner for the purpose of preventing the erosion of the mucous membrane of the lower lip which is habitually caused by the action of the mouthpiece of a wind instrument, for example a clarinet, due to its position against the teeth.

This aim can be achieved by means of the lip protector which is manufactured from a relatively flexible thermoplastic material and configured as an arched body consisting of a peripheral wall for holding and has a channel running under it for its full length by which the protector is fitted over the lower dental arch of the player who uses it, the crown of which it covers, in order to prevent direct contact between the crown and the fold of his or her lower lip and consequently the eroding of the labial mucous membrane close to the fold which habitually occurs in wind instrument players with the supporting and rubbing of the mouthpiece of the instrument.

Observing the first figure, it can be appreciated that the lip protector is formed by an arched body (1), under the length of which runs a fitting channel (2) with section of inverted "U" shape, one aim of which is a front portion of peripheral holding wall (3) and the other is a rear portion of peripheral holding and supporting wall (4), the two portions of wall being substantially parallel to each other and converging together in an outer protective surface (5).

The simplified section offered in the second figure shows a human mouth (6), in which can be appreciated the lower and upper lips (7 and 8 respectively), and close to them the lower and upper dental arches 9 and 10 respectively).

Close to the mouth (6) can be seen the end portion of a musical wind instrument (11) and its mouthpiece (12) between the lower lips (7) and upper lips (8), resting on the lower one. On the lower dental arch (9), covering its crown, can be seen the arched body (1).

The invention has been described according to the mode of realisation illustrated. It is obviously possible to modify details, for example, with regard to the precision of the arching, extension and degree, as required, or in the configuration, amplitude or extension of the outer protective surface, without going beyond the framework of the invention.

A preferred realisation of the invention suggests that the lip protector should be made by heat moulding of thermoplastic materials, and should be of a relatively flexible nature so as not to cause any damage in use.

In this realisation, the lip protector is an arched body, under the whole length of which runs a channel of inverted

"U" shape for fitting the protector to the lower dental arch, bounded on the longer sides by a first portion of peripheral holding wall at the front and a second portion of wall for holding and supporting, at the rear, both walls being substantially parallel to each other, and converging together at the top in an outer protective surface which will keep the upper and lower dental arches separated.

For a better understanding of the above, we attach hereto a descriptive memorandum of a set of drawings showing the object of the invention in one of its preferred realisations, though the said graphic representation should not be construed as constituting any limitation of the peculiar characteristics of this application.

FIG. 1. Shows the lip protector suggested by the invention, by means of a rear view taken from a higher angle. For greater precision, the concealed edges that define its shape are indicated by lines.

FIG. 2. Illustrates, in a simplified way, the longitudinal section of a human mouth in which can be appreciated the end of a musical instrument with its mouthpiece, and the disposition of the lip protector, as in the invention, on the lower dental arch.

The lip protector can be manufactured at an economical production cost, by the heat moulding of plastic materials, obtaining a rigid section whose shape is substantially similar to that of the letter "U", although the extent of the invention should also be understood to include the obtaining of a lip protector obtained by a thin sheet of material which when used can be bent or folded to configure the desired outer protective surface and the U-shaped channel allowing the lip protector to be fitted over the crown of the lower dental arch and is held there by the support of the peripheral portion of holding wall between the lip and the lower dental arch and, for example, ensuring retention with the collaboration of a second supporting and holding wall at the rear.

It is evident that the lip protector can be made from other materials than thermoplastics, without altering the essential nature of the invention.

It is also evident that the lip protector must present a configuration free of rough surfaces, sharp ridges or corners that may cause erosion or other damage to the surfaces in contact with it.

The lip protector whose registration is sought herein has been designed, both in satisfying the requirements of users as to durability, economy, ergonomics, hygiene, safety, etc., and in the resolution of production plans.

What is claimed is:

1. A lip protector for protection of the lower lip of a wind instrument player from contact with a lower dental arch comprising in combination, a lower dental arch covering body of a thin flexible plastic sheet material having a front peripheral wall for extending downwardly in a position for abutting a frontal region of the lower dental arch, a protective upper crown cap extending from the front peripheral wall defining a "U" shape channel for capping teeth of the lower dental arch and a rear peripheral wall extending from said crown cap downwardly in a position for abutting a rear facing region of the lower dental arch, wherein said front peripheral wall extends downward a further distance than said rear peripheral wall extends downward to thereby retain said lip protector on the lower dental arch and prevent direct contact between the crown of the teeth and the lower lip.

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